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ABSTRACT

A study was made of comprehensive school teachers' perceptions of mental health when it was defined as a "dynamic integration process of the physical, psychical, social, and spiritual existence of a human being." Two groups participated: 76 middle-aged teachers and 87 advanced teacher trainees. Perceptions of health and mental health were measured with attitudinal statements and with psychological, psycho-biological, and biological explanations of health etiology. Mental health and social adaptation were surveyed with thematic interviews, psychological measuring tests, and statements regarding job satisfaction. Additional information was obtained with demographic, life change, and academic achievement variables. The middle-aged teachers regarded mental health issues with more psychological understanding and emphasized more the psychological and biological etiology of health than did the teacher trainees. This was not interpreted as an effect of cultural change, but as an influence of maturation. Cultural influences played a larger part in the perception of mental health by the teacher trainees. (JD)

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RESEARCH REPORT 27

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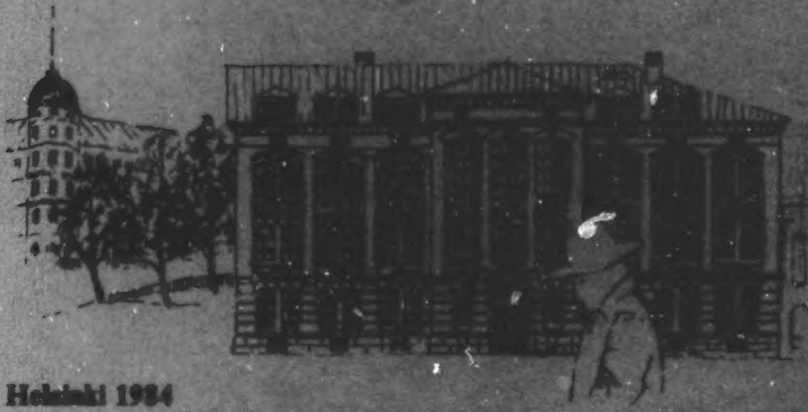
TEACHERS' PERCEPTION OF MENTAL HEALTH, ITS RELATIONSHIP TO THEIR MENTAL HEALTH AND TO CHANGES THEREOF



Helsinki 1984

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RESEARCH REPORT 27

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Seija Nieminen

TEACHERS' PERCEPTION OF MENTAL HEALTH, ITS RELATIONSHIP TO THEIR MENTAL HEALTH AND TO CHANGES THEREOF

Academic dissertation to be publicly discussed by due permission of the Faculty of Education in the University of Helsinki, in Auditorium 1 of the Department of Teacher Education, on January, 18, 1985, at 12 o'clock.

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"Mutta kyllä tietäjien
itsensäkin taitaa olla
vielä tänä päivänäkin
työläs tietää, mikä nolla
missäkin yksinään,
mikä yksi edessään.
Ja kun pitäis tyhmiäkin
aina hiukan viisastuttaa;
vaikka kai se oma pää
tietäjääkin askarruttaa
sentään kaikkein eniten."

Lauri Viita (1949): Kukunor

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Mrs Riitta Tuira and Ms Maire Mähönen have typed the manuscript.

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ABSTRACT

Seija Nieminen

TEACHERS' PERCEPTION OF MENTAL HEALTH, ITS REALTIONSHIP TO THEIR MENTAL HEALTH AND TO CHANGES THEREOF. Research Report 27, The Department of Teacher Education, University of Helsinki 1984, 306 pp. ISBN 951-45-3508-1. ISSN 0359-4203.

The purpose of the study was to elucidate the associations of the mental health and of the perceptions of mental health of comprehensive school teachers, when mental health was defined as a dynamic integration process of the physical, psychical, social, and spiritual existence of a human being.

The subjects of the study consisted of two groups: one of middle-aged teachers and one of advanced teacher trainees (N= 76+87=163). The former teachers had been 20 years in the profession whereas the latter were in the final stage of their training. Both groups were also analyzed at the beginning of their teacher training.

Methods: Perceptions of health and mental health were measured with attitudinal statements and with psychological, psycho-biological, and biological explanations of health etiology. Mental health and social adaptation was surveyed with the thematic interviews, with FAM, an abbreviated version of MMPI, with the Rorschach test, and with statements regarding job satisfaction. Additional information was obtained with demographic, life change, and academic achievement variables.

The statistical methodology comprised tests for statistically significant differences of means as well as correlation, item, discrimination, factor, and regression analyses.

Principal findings: The middle-aged teachers regarded mental health issues with more psychological understanding and emphasized more the psychological and biological etiology of health than the teacher trainees did. This was not interpreted as an effect of cultural change, but an influence of maturation. Contrariwise, the greater expression of democratism, broadmindedness, flexibility, and creative capacity, but also symptomatic behavior of the advanced teacher trainees were deemed cultural influences. The adopted mental health attitudes and the models of health explanation correlated with mental health.

The following dimensions of mental health emerged: productivity, inner harmony, mental disorder, analytical vs. global perception, adaptive regression, social adaptation, etiological explanations of health, and spirituality vs. materiality. The essential factors of mental health were considered the different manifestations of consciousness: awareness, intrapsychic consciousness, self-consciousness, social consciousness, and societal consciousness.

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I INTRODUCTION AND OBJECTIVES

In the 1970's the emphasis in mental health shifted more and more onto preventive care. Efforts have been made to point out key groups whose work has a significant impact on the entire society. From the point of view of mental health, the school with its teachers and pupils is one of the important institutions which can exert a preventive effect in all population groups. The school is going through a crisis which manifests itself in the problems of social education and mental health. This crisis is not a domestic one but world-wide; it constitutes a turning point for Western culture. What is then the matter with education? Judge (1981) has summarized the contradictions in English schools in five dilemmas: the ultimate objectives of education, the demands for uniform achievement levels and national examinations, equal versus differentiated curricula, centralized school administration versus teacher autonomy, and the personal versus the bureaucratic professional role of the teacher.

Judge considers the above conflicts to have been born out of the serious societal and economic changes the Western countries have experienced in the last few decades. These problems are all intertwined and none is solvable independently of the others.

It is easy to agree with Judge's view about the basic cause of the dilemmas of the school. All of the topics presented above have been repeated in the discussion that has been going on in our country. School reform has not been able to provide unambiguous answers to any of these problems. The basic problem has been our incapability of formulating such new conceptions of human existence and the meaning of life that would be generally acceptable (in these altered circumstances). Consequently, there has been no restructuring of the contents of our culture into elements that would forestall conflict and provide the means for solving problems.

Every one of the aforementioned dilemmas of the schools is psychologically interesting, but from the angle of mental health it is the first and last one that warrant further discussion: How are the ultimate objectives of education determined, how does a teacher perceive these objectives and what means does she have at her disposal for attaining them? What is the school's conception of a well-balanced person, i.e., of mental health?

It is the dilemma of the educator that has been considered significant in the crisis of our schools (cf. Vikström 1981). Some recent works (i.a. Sauvala & Kari 1981) show that there is greater than expected agreement on the basic values in education, but that the teachers evidently experience the adoption of the new role of educator as difficult. The phrase 'teacher identity crisis' may well describe the phenomenon.

The deep and radical societal change that has taken place in our country has posed new challenges for home as well as school education; there have been demands, i.a., for more consideration of individuality. In the past, the objectives of the parents, of the schools, and of the church were quite parallel whereas today the acceptance and practical realization of pluralism is demanded. The latter perplexes educators, makes them insecure, and supports their demands for the adoption of a new role.

In addition to the problems of mental health of the pupils, the problems of mental health of the teachers have also become a subject of public discussion; as well as the possible occupational origin of these problems. Work counseling has been one of the proposed solutions for the difficulties of the teachers. Occupational guidance would include therapeutic effects.

One of the objectives of this study is to find solutions to the latter questions. The aim is to examine the attitudes and conceptions of mental health adopted by teachers, the stability of the teachers, and how these correlate with some traits of personality, experiences of life and societal changes.

The central problem of the theoretical analysis in this study is defining the conception of mental health: the survey of its determinants and the elucidation of the conception of man inherent in it. Biological, psychic, social and spiritual factors are presented as determinants of mental health. The conception of man is described both in terms of spirituality and materiality, and its changes are discussed regarding the period from the late

1950's to 1980. This is the period when the empirical data of this survey were collected. An individual perception of mental health is assumed to be associated with one's experienced and conscious mental health, its mental manifestations, especially with consciousness and awareness. Consciousness is an important factor in the activity of the teacher and because its different and diverse levels of manifestation are also considered more generally important for mental health and for the development of a perception of mental health, it will be treated in this study with reference to the various theories concerning it. While neither mental health nor the personality of the teacher can be examined on the basis of some single psychological theory, Coan's dimensional model of the optimal personality has been employed. It is a synthesis of different psychological theories and phenomena. In the present study, personality is considered a superordinate concept for mental phenomena.

The theoretical section deals with the main determinants of teaching, the teacher's mental health, and her success as a teacher. On the basis of these analyses, the following are presented as the central factors in mental health and teaching: functions of the ego (particularly the cognitive processes), cognitive self-conception, and social adaptation, or the ability to solve problems (coping, creativeness, adaptive regression). Defenses and the various disturbances and derangements of affective states and consciousness such as narcissism, anxiety, aggressiveness, and hostility comprise the elements examined as the central factors in mental disturbances.

The perceptions of mental health are measured empirically as attitudes toward mental health and as etiological explanations. Consequently, a part of the theoretical section is devoted to an examination of the theories concerning the structure of attitudes and their significance in personality, and to a discussion of the changeability of attitudes by educational and other means.

The theoretical section concentrates on the description, analysis, and conceptual definition of the above-presented phenomena. The goal is to reach a syhthesis consisting of a differentiated and functional, but still coherent, conception of personality and mental health.

It is the objective of the empirical section, through statistical and content analysis of the methods of research applied, to arrive at a valid operationalization of the above theoretical concepts and a relevant description and measurement of the phenomena examined.

The subject group proper comprised a group of teachers graduated from the Helsinki Teachers' College who had been active as teachers for twenty years after graduation. A control group consisted of advanced teacher trainees. In a description of the subjects the data obtained are compared with results published in connection with earlier teacher studies. The purpose here is to determine the degree of general applicability that can be attached to the findings of the present study.

The principal aim of the empirical study is nevertheless to elucidate the relationships that exist between the teachers' mental health and their perceptions of mental health, and to observe the changes and developmental trends of these relationships. The study examines mental health in terms of dimensions of the optimal personality; the historical description and explanation of these dimensions is also attempted. The explanatory factors, chosen on the basis of earlier teacher studies, comprise factors such as age, sex, cognitive abilities and practical skills, and other factors of personality measured for the first time over twenty years ago, as well as changes in life; the social factors include family relations, size of school and its working atmosphere, and the type of local government of the school locality. Also here the main emphasis is on a description of relationships, i.e., on a survey of the role of the principal explanatory variables of each dimension.

II THEORETICAL FRAMEWORK OF THE STUDY

2.1. On the determinants of mental health

2.1.1. Conception of mental health: a historical perspective

Mental health has meant different things in different societies and during different historical periods. In primitive cultures and in Asian societies, the boundary between logical thinking and fancy has not been as sharply defined as in Western thinking which emphasises logic and so-called objectivity. These cultures have thereby allowed more permissible attitudes toward erroneous mental images or distorted personal relationships, and people there have been able to approach abnormal behavior in a more creative way than people in the West.

In Western societies, every age has had its own conception of mental disturbances. Hippocrates (c. 500 B.C.) considered them a disease of the brain. The popular belief of his time was, however, that they were the result of demonic forces that had seized hold of a person. This conception of evil spirits as the cause of deviating and delusional behavior persisted right up to the Age of Enlightenment. During the Middle Ages and still in the New Age this fact led, even in our country, to the persecution of insane people as witches, i.e., as individuals who had fallen away from God. This interpretation of mental disturbance was in accordance with the prevailing theological conception of man in the universe.

In the eighteenth century, the expansion of the ideas of rationalism, humanism, and democracy brought about a general acknowledgement of the Hippocratean conception that mental disturbances are diseases with natural causes. It has been the prevailing theory for over 100 years.

The role of psychic factors in mental disturbance began to receive attention in connection with the study of hysteria in the 1890's, but more serious research into the nature of psychodynamic processes was not attempted until the work of Freud and his colleagues in the 1900's.

Still younger is the social and sociological approach to problems of mental health. It has gained emphasis only in the last few decades.

(Achté et al. 1971, 1-7; Mora 1980)

Today again descriptions of mental disturbances have appeared which associate mental illness with cosmological problems, with questions of the ultimate purpose of life and with the spiritual existence of the human being (Frankl 1978, 1981).

2.1.2. On the definitions of mental health

Mental health is a relatively new concept in the Finnish language. It stems from the 1950's when mental health was regarded as the opposite of mental illness. Because of this reference to the concept of illness in the original meaning of the word, the concept of mental health has received much criticism. It has been emphasized, in particular by Rauhala (1977a), that mental health or illness is not actually a question of organic health or illness but rather of a structured understanding of the world and of the organism itself by the mind, i.e., by consciousness, or of disturbances thereof. The disturbances of the mind are thus different by nature from organic diseases, and their description and study involves, according to Rauhala, the employment of a distinct set of concepts.

The wide distribution of the concept of mental health, however, makes it difficult to think of a suitable term to replace it. One of the substitutes used has been psychic well-being but this concept, too, has its limitations. The concept of well-being has been applied originally in sociological studies of material well-being or standard of living. Recently, it is true, such studies have begun to examine the qualitative aspects of well-being - subjective experience (Allardt 1977; Uusitalo 1977). It has been demonstrated in several of these studies that standard of living, education, social status, and some other social factors are of importance as resources for mental health. It can be said that even social and societal factors belong to the determinants of the psyche.

The World Health Organization, WHO, has defined mental health as an adaptive condition which is subject to variations and fluctuations of degree and which is influenced by both biological and social factors. It includes the capacity of an individual to form harmonious relations and to participate in changes in his social and physical environment. It further consists of an ability to achieve a balanced satisfaction of the potentially conflicting instinctive drives of an individual and to find harmonious expression for these in the full realization of an individual's potentialities (WHO 1951). The definition is demanding and one can only wonder what part of the world's population fulfils its requirements.

In its more recent mental health objectives, the emphasis of the WHO has shifted more towards consideration of local circumstances and cultural factors, to the human being as an entity and hence also to his spiritual and metaphysical needs. The definition of mental health now stresses the totality of man's needs - his inner life, his cosmos, his total reaction to his physical and emotional world. (Lambo 1982)

Mental health has also been defined as a state of normality. This definition immediately leads to the question: What is normality? Normality is often conceived as health which in fact makes normality into absence of disease and its symptoms. But normality can also be considered in a statistical sense as average behavior in a situation. This kind of definition, too, is lacking as no average person exists. Neither can all that is average be held desirable or healthful. E.g., smoking has been very common in our country but can hardly be considered healthful. Note, however, that an individual who has adopted the average norms fares better in communities where public matters are settled by majority decisions.

Normality can also constitute an ideal state or utopia. It is then defined according to the objectives set for the individual development of a human being, e.g., self-realization or personal maturity. Another basis for defining normality is social acceptability. Mental health is in this case determined by the normative expectations of a community. The expectations, objectives, and ideals vary from culture to culture and from era to era with factors like economic structure and the prevailing opinion on the question of the meaning of life. This is a case of so-called cultural relativism. Different economical structures presuppose and favor different physical, mental, and social characteristics of an individual. Rigid and one-sided expectations by communities may hinder the full development of some traits of individuals. Cultures that have grown inflexible lose their creativity and become sources of mental disturbance.

In his analysis of the concept of normality, Viitamäki (1978, 131-136) points out its nature as a directive standard. In terms of normal behavior, it acts for adjustment and submission. This standard has two meanings, the statistical and the ethical, which may stand in contradiction to one another. Viitamäki, too, stresses the fact that not all average behavior is healthful, let alone desirable.

Psychic adaptability is a generally accepted attribute of mental health. An individual tightly bound by behavioral norms is, however, unable to act creatively for the progress of himself and his culture. Here is an obvious contradiction because, while creativity and progress belong to mental health, creativity can also be associated with attributes of social anomality. It has been shown above how the contemporary perceptions of mental health contain contradictory elements. As a reaction to the deterministic perceptions of man and the long tradition of regarding mental disturbance as an illness, a dialogue has sprung up about the moral-philosophical side of the concept of mental health: the personal responsibility of a human being for a healthful way of life and for his own mental health. These problems have especially interested those therapeutists and educators attempting to define the criteria of a healthful way of life.

More emphasis than before has been given to the view that personal and social responsibility, self-control, and reasonable feelings of guilt are part of a wholesome human existence, i.e., normality. It is understood that independent personal development has to proceed in optimal relation to the increase of social cohesion.

Psychic balance was mentioned above as a possible synonym for mental health. When applied in this sense, it cannot, however, signify a state of permanent stability but rather an equilibrium and harmony between the different factors of mental health; it is thus a relationship which holds the various physical, psychical, social, and spiritual processes in an optimal reciprocal relationship. A permanent state of stability as such inhibits development and cohesion. Mental health is then a dynamic process whose content and accentuations may vary, as has been described by some developmental theories, e.g., that of Erikson (1963).

(Holmström 1970; 1972; 1979, 67; Korchin 1976, 83-100, 106-107; Nieminen 1970, 38-43, 60-76, 96-100; 1978; 1979; Offer & Sabshin 1975; Viitamäki 1978, 133-142; The Principles of Preventive Mental Care by the Finnish Association of Mental Health, Suomen Mielenterveysseura 1978)

Mental health can also be described as something resembling a renewable natural resource. It is indispensable for an individual in overcoming the problems of life and in enduring physical and psychical stress. This resource can be considered to be composed of physical health and a mental capacity which both provide energy and solutions in predicaments of life and help one to persist in difficult situations. Even economic resources and inter-personal relationships can be indirectly utilised, and they thus have an effect on mental health (Lehtonen 1978; Majakero 1979).

Proponents of humanistic psychology have, in their definitions of mental health, emphasized the mental factors, the relationship of man to the universe and to his deepest self. In his logotherapy, Frankl (1978, 89-94) considers the issue of the meaning of life as the central problem of mental health. He describes the existential frustration the problems of which differ from those found in psychogenic disturbances. Here the question is of disturbances of the human existential mind, the nucleus of personality. Frankl calls it a noögenic disturbance. Noögenic disturbances are based on a conflict of values, i.e., a moral conflict. The term mind or spirit here is not primarily religious in content but refers to a specific human dimension distinct from the psychic. The term mental, as it is applied in this study, refers to both psychic and spiritual factors.

The above-described attributes of mental health also belong to the attributes of a healthy personality. Quite exhaustive is the compilation of criteria for a healthy personality presented by Jahoda (1958): Firstly, emphasis is placed on the relation of the individual to himself. The significant factors of this relation include self-esteem, self-consciousness, ego-identity, and an acceptance of one's own individuality. A healthy personality comprises growth and development, the optimal employment of one's own abilities, orientation and investment in the future. An adequately functioning individual is integrated, lives in a balanced relationship with his environment, including nature, and can endure stress. He is independent in his actions and decisions nor bound by unconscious needs. He has a sound sense of reality, and he is emphathetic. A healthy individual is able to control his environment, to love, to work, and also to play. To the attributes of the healthy individual presented above, Frankl (1978; 1981) adds a sense of the meaning of life and its fulfilment.

The most recent definitions, like the ones of Coan (1977), Korchin (1976), and Viitamäki (1978), emphasize the differentiation and integration of a healthy personality which bring about flexible and well-adjusted behavior and an ability to endure stress. Today there is more emphasis than before on the ability of the individual to solve problems than on defensive behavior. In this philosophy, creativity and adaptive regression form important factors of mental health as revivers of mental resources. Anxiety, guilt, and aggression are also elements of normal experience but a healthy individual conceives and controls these feelings and thus they do not direct his activity. The humanistic psychology in particular stresses the capacity of the healthy individual for open experience both with regard to one's internal as well as external stimuli. Also psychosomatic symptoms have their own significance when man is observed as a whole. And it is widely accepted that a human being is a functional entity who in decision-making situations or under stress selects among different solution models in accordance with his inherited or acquired characteristics. If his resources or previously adopted models of action fall short of a positive solution, i.e., coping-behavior, then the choice is between solutions less favorable from the viewpoint of mental health. The latter comprise various defensive ways of action and, as a result of these, long-term pathological mental, physical, and social symptoms. In case an individual's personality is rigid and inner compulsions or outer norms prevent neurotic or sociopathic behavior, the only answer left is psychosomatic reaction (Rechardt 1978a).

Western theories present health and disease as relative concepts: as extremes on a continuous scale where the points of transition are a matter of agreement. The relativity of health is governed by the characteristics of an individual and by his life-situation, on one hand, and by the criteria adopted by the particular culture and community, on the other (Eriksson 1981, 96-97). According to Leiman (1977), materialistic psychology offers a different conception of mental health; in it, there is a qualitative distinction made between psychic health and mental disturbance. The latter, he explains, is born during behavioral action and can be classified either as a functional disturbance or as an internalized psychic disturbance. In practice, mental health and its disturbances are expressed as changes in the quality or quantity of individual action mirrored in the person's experiences, thoughts, social interactions, or psychosomatic reactions.

The question can be asked whether the concepts of health and mental health are inherently different. Dunn (1961) defines health as the integrated biological, psychical, and social function of a human being and as the integration of the entity of a person. Woodruff (1961) describes health as a hierarchic system based on the co-operation of biophysical, psychological, and social factors. According to Eriksson (1981, 100-101), health is a state of integration consisting of a sense of healthiness ("soundness and fitness") and well-being and of an absence or compensation of physical and psychical dysfunction. Health is thus a personal state which depends on the individual, his conditions of life, other individuals, and on the particular culture, and it must be evaluated against the background of the individuals's conception of health and man.

The above conceptions of health do not differ much from the definition of mental health adopted in this study. There is a question of emphasis rather than of essential difference.

Regarding conceptions of mental health, the consciousness-related phenomena are more accentuated than regarding conceptions of general health. The wholeness and uniqueness of a human being is nevertheless emphasised in both.

No real definition of mental health has been presented above so far, i.e., the concrete criteria for such a definition have not been defined. According to Ketonen (1981, 94, 100), health and mental health may be describable but not definable in a universally applicable way. This can be seen from the way every definition of mental health, with its listed attributes of mental health, displays human ideals or objectives and holds no other general truth than that which originates from the goodness or rightness of the objectives and the capability of the definition to serve these objectives.

In the present study, mental health has been understood as an extensive, interdisciplinary phenomenon. Although here the focus will be on the psychic processes, none of the more specific psychological concepts, like psychic balance, has constituted a serious alternative to mental health. Mental health is defined as reciprocal and dynamic physical, psychical, social and spiritual integration processes which may seem to contain contrasting elements but which nevertheless are in optimal relationship to one another.

In the empirical survey, the factors of mental health examined include estimations of the physical, psychical, and social well-being of the teachers, by the author and by the teachers themselves, as well as evaluations concerning disturbances of these factors. The studied elements of mental health further include certain cognitive abilities and characteristics of personality and metaphysical attitudes measured with projective techniques. Emphasis will be on the psychic factors; of the physical factors only indirect information and no objective measurements exist.

The factors of mental health will be described and analyzed as relational systems with application of a model of the optimal personality, which will be presented later on. This model has played a part in the choice of the factors examined in this study. The conception of mental health applied is realised through the variables chosen for study.

2.2. Essential elements of conceptions of man

2.2.1. On the prevailing conceptions of man in 1950-1980

The conception of mental health employed, and defined above, contains implicitly a conception of man: an idea about the psychophysical essence of man, about the nature of his activities, about his position and responsibility, and about the limits of these.

Conceptions of man belong to the sphere of meta-science and they are not empirically analyzable as such. As the adopted conception of human existence nevertheless determines much of empirical research, the practice of education and nursing, and ultimately even much of the objectives of these, it warrants closer treatment.

Eino Kaila (1890-1958), a professor of philosophy, introduced the neopositivistic ideal of science and the methods of experimental psychology to Finnish humanistic science in the 1930's. These acquired an established position in education, psychology, and psychiatry during the 1950's and 60's. Kaila's epistemological work *Inhimillinen tieto* (*Human Knowledge*, 1939) has been regarded primarily as representing logical empiricism. His thinking was not, however, limited to neopositivism; also phenomenological and humanistic influences are observable in his production. In *Persoonallisuus* (Personality, 1934, 2nd printing 1954, 6th printing 1961) and *Syvähenkinen elämä* (*Deep-mental Life*, 1943), Kaila sees the basic origin of the conception of man in man's biological existence, but his conception also incorporates the central ideas of the Gestalt theorists and of the psychoanalytic doctrine of drives and mental forces. The latter work, in particular, is devoted to the examination of the metapsychological, and thus even the spiritual, dimensions of man. (v. Fieandt 1980; Koskenniemi 1980).

In our country, the positivistic ideal of science, logical empiricism, as such never gained the acceptance of all scientists. E.g., in educational practice, man has always been understood as intentional by nature, nor has absolute determinism been feasible in research but a phenomenological research tradition has survived alongside it. (Iisalo 1980, Koskenniemi 1980, Päivänsalo 1980).

A philosophical or anthropological analysis of human existence, however, was scarce in education, psychology, and psychiatry in the 1950's and the 1960's. In education, for instance, this research tradition was considered scientifically inadequate, speculative. Empirical research was very much in the fore (Iisalo 1980, 7; Niskanen 1978). Both the behavioristic and psychoanalytic conceptions of man became established in professional psychological and psychiatric practice at that time (Achté et al. 1971, 7; v. Fieandt 1980; Nupponen 1980; Takala 1977; Toskala 1970).

There are two research interests associated with the behavioristic conception of man: the ultimate reduction of human psychic reactions to natural science, physics and chemistry, or to environmental factors; and the explanation of human behavior solely through the methodology of empirical research. The conception of man predominant in our country has contained elements from both. (Viitamäki 1978, 5-15)

A biological and deterministic basis can be observed even in the conception of man of classical psychoanalysis. Freud himself saw biological drives as the ultimate determinants of human behavior.

By the end of the 1960's both researchers and the representatives of the professional praxis had become aware of the limitations of the behavioristic and psychoanalytic theories. Although the neurophysiological and biochemical research of the central nervous system has made remarkable progress in the last decades, attempts to prove CNS activity identical with psychic processes have not succeeded. On the contrary, it has become more and more evident that the biological and the psychical processes of man are governed by separate laws and no uniform theory of human existence can thus be formulated. Despite the possibility of handling ever larger bodies of observational data brought about by developments in computers and statistical models, there has been no corresponding progress in the elucidation of psychic processes and human behavior. And environmental factors as explanatory variables in behavior have ended up playing a rather limited role. It has become clear that the behavioristic conception of man and the empirical research tradition can provide only limited information about the nature of human psychic processes.

(Ahmavaara 1970, 11-36; v. Fieandt 1972; Häyrynen 1978; 1980a; Nupponen 1980)

As a consequence, psychoanalytic circles undertook to analyse the nature of psychoanalytic activity and reached a radical conclusion: Psychoanalysis is, in essence, a quasi-naturalistic and quasi-deterministic theory and method, and it is best applied hermeneutically, i.e., as a science of meanings (Lesche 1971).

Rauhala (1970; 1977b) points out that the crucial question of psychology is the problem of meaning. Thus so-called depth-psychological and psychoanalytical theories and techniques should be regarded as sciences of meanings and the fundamentals of their application considered in the terminology of existentialist philosophy and an existential conception of man.

It was not until later in the 1970's that a serious discussion emerged concerning the fundamental principles of education and health, i.e., how to explain and understand human existence and the nature of this existence. There has also emerged a new tentative vision of man and of the actual scientific role of psychology in the study of man. The thinking of the various schools has also become more uniform. The psychology of the socialist countries has made a contribution of its own to the dialogue.

(Kari et al. 1978; Kyöstiö & Luukkonen 1974; 1976; Mielenterveyden ja sen häiriöiden perustutkimuksen ongelmia, Problems of Basic Research in Mental Health and its Disturbances, 1979; Päivänsalo 1978; Sauvala et al. 1979; Sava 1981)

The change in the conceptions of man has not been brought about solely because the former conceptions have proved of limited value in practical work; the change stands in a logical interrelationship with a corresponding change in the physical world view. Beginning with the laws of Newton, the conceptions of classical natural science, which the older behaviorism relied upon, have been applicable only with limitations. In the 1900's, the theory of relativity and quantum theory have definitely changed the basis of our physical world view, our conceptions of space, time, matter, and causality (Laurikainen 1980, 40-50).

According to Päivänsalo (1980), the fact that the positivistic ideal of science and the positivistic conception of man acquired an established position also in the educational sciences during the period from 1950 to 1970, was primarily an effect of the profound societal change that took place after the Second World War: The society was industrialized and in educational science the emphasis shifted from a humanistic world view to a more biologically and technically oriented one. Päivänsalo especially stresses the role of the society and its structural changes in the determination of educational objectives and in the development of schools, higher institutions of learning, and pedagogical research.

The changes in the conceptions of man that have taken place in general thinking and in the field of education also appear in school legislation and hence also in the everyday education carried out by teachers. The Elementary School Act of 1957 reflects Christian values and conceptions of man which still in the late 1950's constituted the primary determinants of the ethical objectives of education. The educational objectives of that time were quite unambiguous and conformed to an established educational tradition; thus no separate definitions of them were necessary.

Beginning with the official planning of the present comprehensive school in 1959, and specially since 1971, there has been a change in educational objectives and attitudes. The Report of the 1971 Committee on Education (1973, 9-15) attempts more clearly than before to link the objectives of educational policy with the other objectives of social policy: the mental and material well-being, freedom, security, and contentment of the members of society and rich individual development secured in accordance with the principles of the Universal Declaration of Human Rights. The essential dimensions of the conceptions of man of this declaration are democracy, equality, justice, cooperation, internationality, and personal integrity. Man is seen as active and critical and as conscious of his position in the community. Education is to enhance the development of the aforementioned characteristics in an individual and to help him to form an integrated picture of the society, to formulate a personal view of life and the world, and to adopt and create culture. One of its most significant tasks is also the training of labor for the different industries. (Vuoden 1971 koulutuskomitean mietintö, Report of the 1971 Committee on Education, 1973, 15-23)

In his theological dissertation, Peltonen (1979) examines the conceptions of man and the ethical principles behind the school reform on the basis of committee reports between 1956 and 1975. He considers the origins of the school reform to be found in a humanistic conception of man; also the Christian conception has had an influence. In the beginning of the reform, a balance existed in the relationship of the individual versus society. The uniqueness and the inherent value of the individual were emphasized without forgetting the social-ethical responsibility of man. Later the Christian and humanistic conceptions of man were replaced more and more by elements from the naturalistic and Marxian ideals of science (1979, 206-211).

In the naturalistic conception of man Peltonen also incorporates pragmatism: the pursuit of gain, adaptation, and functionality as well as the psychological analysis and regulation of the individual (1979, 42-61). He considers socio-collective orientations and objectives as Marxian (1979, 61-80). The concepts of naturalism and Marxism as employed by Peltonen are foreign and inaccurate in a psychological frame of reference, but if his intention is to demonstrate that the later stages of the school reform, more than the earlier ones, were directed towards societal goals through the application of psychological methods, his observations can be accepted. It is apparent that the foundation of the former educational tradition, the Christian and humanistic conception of man, has in the course of the school reform had to give way to a pluralistic and psychological conception of man which has, however, been partially molded along with the development of research methods. But even the strictly naturalistic conception of man has been replaced in the 1970's by the so-called neohermeneutical paradigm, i.e., humanistic psychology, and the Marxian conception of man.

The conceptions of man brought to the fore by the school reform stresses, in contrast to earlier conceptions, the demands for democracy, equality, cooperation, internationality, and social responsibility as well as the activity, creativity, and criticalness of the individual. Man is nevertheless seen as unique, and thus one of the fundamental objectives of education is the personal integrity of man. In spite of the increased influence of the society on education, in part as a result of the changes in economical structures, the ethical values of education are still not derived from materialism. Instead, the sources of these values lie in humanism and Lutheran Christianity, the latter of which even today constitutes the official faith of the majority of the population of our country (Nieminen 1978; 1979, 30-39; Päivänsalo 1978, 47).

2.2.2. The body-mind problem and the determination of behavior

From the viewpoint of mental health, the central aspects of perception of man are the relation of body and mind as well as the determinants of behavior.

The question of the relationship between the human body and the human mind arose when man had reached a stage of development where he was able to objectivate himself in his mental images and place himself onto a platform to observe his own behavior and psychic experiences. Man is thus both the subject and the object.

The human essence is generally understood to consist of both mental (or spiritual) and material elements which influence each other. It has been verified by modern medical research, particularly in the fields of psychosomatics and neurology, that subjective human experiences affect the physical state and that changes in brain function induce changes in psychic experiences.

How this intercommunication between the physical and the psychical takes place and what is the mechanism in brain function responsible for translating physical and physiological stimuli into psychic symbols or meanings are matters of dispute in contemporary science. Some kinds of learning processes may be involved although Miller (1974, 51-60, 95-123) and Chomsky (1976, 12-44) have demonstrated that the acquirement of language, at least, cannot be explained as learning through conditioned reflexes but rather as a phenomenon associated with the cybernetic structure of the brain.

We know, however, that even if the entire human body participates in gathering information, it is the brain that registers, integrates, and interprets subjective experiences as well as objective data.

The body-mind relationship has been conceived in different ways in different cultures and during different ages, and some of the views held have diverted very much from the ones predominant in the West. The relationship between the body and the mind has been observed from three main angles. Either one of the two has been seen as the primary element (monism, theory of identity), or the two have been considered reciprocal (dualism, interactionism), or they have been thought of as independent and parallel.

In the last few years, attempts have been made to create a comprehensive conception of man along almost purely behavioristic lines of thought. In these formulations, the latest knowledge about human psychological and biological existence has been taken into account. One such is Bunge's (1980, 209-219) psycho-biological approach to the body-mind problem. His goal is, with the aid of the latest findings in neurophysiology and psychology, to transform the view of the mind as a series of sensations into a theoretical presentation. Bunge dismisses dualistic constructions as fruitless and as a drag on the solution of the body-mind problem. He does not recognize idealistic monism; contrariwise, to him psychology consists exlusively of questions reducible to neurophysiology. The objective is to clear psychological explanations of all mystification. Bunge's perception of man is based on psychoneural monism.

Bunge also dismisses teleological constructions because an emphatic stand is inferior to the examination of causalities in the elucidation of the behavior of higher vertebrates despite the intentional nature of this behavior. His thinking regards the analysis of intentional behavior as a special case of explanation of causality. The psychobiological body-mind conception propounded by Bunge is nor narrowly psychoneurally monistic nor broadly materialistic; instead, he includes in it the idea of the effect of the undetermined, emergentist factor. (Bunge 1980, 216-217)

Hebb (1980) agrees with Bunge's basic conception of the nature of the mind and declares himself a representative of psychoneural monism.

The neobehavioristic and social learning theories do not emphasize the body-mind problem as in the theory of behaviorism presented above. They give as their primary fields of interest the cognitive processes, i.e., learning and social activity. From the point of view of social learning, psychic activity can be seen as continuous reciprocal interaction between personal, behavioral, and environmental factors (Bandura 1978a, 194). The central issues of these theories are determinism and human freedom. What is meant here by freedom must be defined: is it the metaphysical or social aspect? Social freedom can guarantee a certain scope of alternatives, social privileges, and thus freedom of action. Individual freedom can, however, be restricted by psychic factors, i.a., irrealistic fears or exaggerated self-control. In neobehaviorism and in the social learning theory, human achievements and actions are considered as determined by a large group of internal and external factors. The internal factors comprise the inborn characteristics, acquired abilities and capabilities, reflective thinking, and initiative (Bandura 1974, 859-869; Toskala 1980).

According to Bergström (1978, 13-15), psyche-dependent processes cannot be accurately localized in the brain; instead, they are always associated with more or less extensive areas of the brain, and they are not strictly limited in time, either. Consequently, the neurophysiologists consider these processes general as phenomena, i.e., macrostates of the brain. These macrostates Bergström (1978, 140-144) assumes to correspond to the psyche. The fact is that they have no physical dimensions, material mass, and since no sensory perception or will is involved, they have no temporal or locational manifestation. The human being does experience the psyche in a concrete way, though, but this is an accomplishment of the physicist contained in each one of us. In other words, it is learning that creates the temporal and locational arrangement of the nervous system. This idea explains why the conceptions of space and time in the Asian countries can differ so greatly from ours. An effort to maintain homeostasis is characteristic of living organisms.

In discussing the primarity of the psyche versus the primarity of materia, Bergström (1978, 181-194) places the psyche foremost. He does not, however, consider the psychic as a unique element of the human being but as embracing the macrostates of all natural systems. Likewise, the concept of physical understood as a microstate of a system covers all of nature. It is thus unnecessary to look for the classical boundary between the psychical and the physical or the subjective and the objective in the operation of the human nervous system, but instead in the general features of natural systems. According to Bergström, the materialistic, psychic, identical, parallel, or interactionistic interpretations of the psychophysical are rendered useless by the observation of the microstates and the macrostates of the same system. His interpretation is not similar to identity theory which considers the physical and the psychical as two different manifestations of the same event.

Bergström's theory has not found complete acceptance. Järvilehto (1979) and Rauhala (1980) have especially criticized its concepts. Rauhala regards as plainly erroneus Bergström's idea of equalizing macrostates of the brain with psychic states. According to Rauhala, they may correspond to each other but they nevertheless belong to different conceptual categories. Krohn (1981, 226-227) agrees with the criticism of Rauhala. They see the macrostates of the brain as determinants of the psychic state but not as the mind itself.

In their work The Self and Its Brain (1977), Karl Popper, a philosopher, and John Eccles, a neurobiologist, have made a demanding attempt to unravel the connections between the philosophical concept of self and neurobiological research. Both Popper and Eccles have a dualistic (or pluralistic) and interactionistic conception of man.

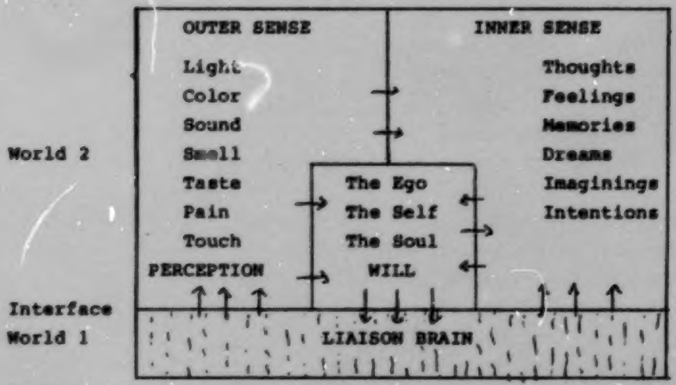
Living things, plants as well as animals, are in Popper's (1977, 35-50) thinking material bodies and thus processes; they are open systems of molecules which can exchange parts of themselves with the environment. They belong to the world of physical entities, or physical states. These physical entities - processes, forces, and fields of forces - all interact among each other. In addition to physical bodies and states, Popper assumes the existence of mental states whose reality is evident from their interaction with bodies. The body-mind, or psycho-physical, problem is the very culmination of the existence of physical and mental states. Popper describes all existence and experience with a set of concepts he calls worlds. The first one of these worlds contains the physical world, its objects and states; the second one the states of consciousness and subjective knowledge of all kind; and the third one the whole of objective knowledge, i.e., man-made culture and theoretical systems (1977, 359). Popper does admit (1977, 115) that, temporally, the body comes before the mind. But he considers the latter more valuable.

Eccles (1977, 355-370; 1979, 210-237) aims at developing a new theory of the interactions of the self-conscious mind and the brain. His explanation of the interface between the world of matter-energy and the world of states of consciousness is based on a dualistic-interactionistic model. The theory is derived from present knowledge of the modular structures of the cortex.

Eccles assumes the self-conscious mind to be an independent entity which actively scans the numerous available modular centers of the liaison brain of the cortex of the dominant cerebral hemisphere. It selects from these centers according to its state of attention and interest and from one moment to another integrates its selection to give uniform conscious experiences. The role of the self-conscious mind is to interpret and control neural events in a two-way interaction. He proposes that the origin of conscious experience is, not in this ultimate synthesis of neural activity, but in the integrative character of the self-conscious mind.

Figure 1

BRAIN ⇄ MIND INTERACTION


OUTER SENSE
INNER SENSE
Light
Color
Sound
Smell
Taste
Pain
Touch
PERCEPTION
Thoughts
Feelings
Memories
Dreams
Imaginings
Intentions
The Ego
The Self
The Soul
WILL
World 2
Interface
World 1
LIAISON BRAIN

(Eccles & Popper 1977, 360)

The belief of Eccles in Divine Providence, whose actions surpass the material manifestations of biological materialism, ultimately leads him to finalistic explanations.

Kroeger (1979) stresses the essential message of Popper and Eccles: A consciousness, in principle, independent of the brain is to be regarded as something which is external to the central nervous system but which interacts with this organ. Krohn (1981, 247-248) considers that the most important contribution of Eccles is the placing of the empirical psychosomatic and physiological observations into a more comprehensive theoretical frame, which most clearly points to the primarity of psychic phenomena. He agrees with Eccles in other respects but considers consciousness and psyche, i.e., the self, unidentifiable in Eccles view. According to Krohn, the self-conscious mind is a reality independent of the body and the processes of the brain, and it is timeless in character. It is not the same as consciousness.

As a criticism of the theory of interaction, Bergström (1978, 188) points out its inability to explain the laws of thermodynamics. No energy or entropy currents associated with this interaction have been detected in the brain.[*] Bunge (1980, 10), for his part, considers dualism a religious and, in particular, a Christian conception and criticies the theories of Popper and Eccles sharply and in detail.

A dualistic conception of man has been adopted into many theories of personality, e.g., psychoanalysis (Lesche 1971; 1979; Laitinen 1978). It was the original aim of Freud to create a scientific theory of the human mind but what came out of it, perhaps in part unintentionally, was a science of the mind, or self-reflection.

Tähkä (1970, 3-6) conceives psychoanalysis in the first place as examining and understanding the inner world of man. At the same time, however, it is concerned with studying the behavior of the human organism. All occurrences and activities within the human organism are part of its total behavior.

Psychic energy, like physical energy, is a hypothetical concept. Neither can be observed as such, only their effects are observable. Tähkä assumes the origin and birth of psychic energy to be associated with the metabolism of the human body, particularly the central nervous system. Thus the psychic would have its roots in the human body. Psychic and scientific determinism, however, cannot be equated. Psychic causality encompasses the assumption that no mental occurrence is arbitrary but dependent and a result of the combined effect of all the past and present psychic phenomena and processes within the personality.

According to Lesche (1971, 58), the causality between the unconscious motives and the symptom is not "natural causality" but the "causality of destiny" described by Hegel which can be dissolved through self-reflection or psychoanalytical insight and interpretation. Despite the psychoanalytical conception of man as both biological and psychical, psychoanalysis does not attempt to unite these different forms of human existence, instead, e.g., Freud regarded them as parallel and not even as mutually interactive.

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[*] The energy and entropy currents of thermodynamics and of the brain. Cf. Bergström 1978, 51-58.

Recently many psychoanalysts have suggested more and more seriously that the essence of psychoanalysis is the interpretation and elucidation of psychic intentions and meanings. Thus its character becomes that of a science of meanings (Apel, Habermas, Lesche, Lorenzer, Radnitzky, Ricoeur) which exludes the regular cause-effect relationships (Rechardt 1978b, 115).

Soviet psychological thinking includes a materialistic view of the relationship of the outer and inner human functions. This body-mind concept includes in itself the dialectical-materialistic reflection theory formulated by Lenin (Marxilais-leniniläisen filosofian perusteet, Introduction to Marxian-Leninian Philosophy, 2. ed., 202-206). In dialectical materialism, matter is considered an objective reality independent of the observing subject. The state of existence of materia is motion. Space, time and causal relationships are basic characteristics of the material world, not merely concepts of thought. Matter is the primary element of reality whereas consciousness and thinking are only reflections in the brain produced by material processes. The knowledge of human consciousness consists of reflections of material reality. Consciousness develops through action, in particular societal action, and it is historical in character. This orientation thus avoids the antagonism between the social and the individual action as well as between the subjective and the objective. All these are observable in human action.

Progress is directed by dialectics with conflict as the driving force. Every stage of development, or synthesis, contains in itself the seed of conflict and thus progress is continuous. This principle of progress is the same in nature and in society.

(Galperin 1979, 43-45; Hakkarainen 1977, 6-21; Laurikainen 1980, 94-98; Leontjev 1977, 29-33; Petrovski 1974, 24-26)

According to the concept of historical reflection, psychic phenomena cannot be observed separate from the general system of interaction of a materially uniform world. The psychic function of the brain, reflection, is both a product and a condition of the real associations between the organism and the environment that acts upon it. Psychic reflection is an active and intentional human function. In practice, psychic processes are not reducible to physiology. The concrete study of the nature and mechanism of these processes has already surpassed the limits of the traditional conception of science (Leontjev 1977, 53-54).

Luria (1979, 14) considers the causal explanation of the highest psychic functions of man as presupposing a point of observation outside the organism, in the history of human society. He does explain psychic processes as associated with brain function but states that they cannot be localized in any specific area of the brain, e.g., the cerebral cortex. The system of psychic function is, according to Luria, a complex dynamic unity where the ultimate invariant objective is realized by its changing system of components. An intricate functional system such as this cannot be situated in a restricted specific site or cell group of the nervous system; instead, its operation requires an entire complex of cooperating regions (Luria 1979, 95-102).

The socialist-materialistic conception of man deviates from the behavioristic one in comprehending that the human being has, in the course of history, developed even qualitative differences in relation to other living organisms, and that the psychic processes which have emerged during this transition are no longer reducible to materia. The Frenchman Sève places special emphasis on this qualitative difference and the societal nature of man. Thus the problem of man is not in his biological but in his societal inheritance. And so the essential viewpoint in explanations of human existence, life and development should be a materialistic-historical one. (Sève 1973, 194-216, 397-425)

Kossakowski (1980) examines the position of reductionism in dialectical-materialistic psychology, where it has formerly, especially in the 1950's, had some influence. According to Kossakowski, the shortcomings of reductionism can be avoided by systematical application of the action principle. This presupposes an attitude where psychic phenomena are not considered ends in themselves but where it is considered the fundamental role of the psyche to steer and direct the interaction of the organism with the outer world. So the psychic processes serve to direct action, i.e., behavior. The iconic and conceptional reflections created during the reception and processing of information are preserved in human consciousness, and thus they constitute the inner images of outer conditions of action which the acting subject can exploit as points of reference in directing himself towards the objectives and conditions of his action. As replacements for reductionistic orientations Kossakowski proposes systemic or structurally systemic approaches. Emphasis should be placed on more comprehensive examination of the psychic factors.

Laurikainen (1980, 95-98) criticizes the basic assumptions of the materialistic conception of man on the grounds of their foundation on what he calls an antiquated conception of natural science; according to him, e.g., its conceptions of time, space, and causality are erroneous. Similarly, it allegedly uses erroneous argumentation in its denial of all that is spiritual in the supernatural sense. According to Laurikainen, the issues concerning the supernatural, i.e., the existence of God, cannot be settled by means of science but require the individual conviction of a human being. Ojanen (1980), for his part, doubts whether the examination of the physical and the psychical within a common concept of action can succeed in concrete research and suggests that the uniform conception of man of materialist psychology may after all prove to be functional only on the meta-level and remain fruitless in empirical research.

The concept of spirituality has a long tradition in Finnish philosophy. It was brought into educational and psychological thinking by Snellman, a follower of Hegel. The essence of spirituality has also been deliberated by the aforementioned Kaila (cf. p. 13). He describes the experiencing of the so-called universal spirit as something so fathomlessly deep as to be beyond conception (1954, 90-92; 1961, 342). Such a state of experience can be reached, e.g., in relation to nature. In spirituality he includes even convictions unaccountable for by empirical deduction. The question of the meaning of life belongs to these. Kaila sees deepest religiousness and ethicism as springing from the realization that life is one and the same. Spirituality manifests also as aesthetic experiences, i.a., in music. In spirituality and music there exists an isomorphism which includes depth, multilayeredness, and genuineness, e.g., the music of Bach (Kaila 1961, 154-156).

The spiritual aspects of the body-mind relationship are accentuated in the Asian conceptions of man. For instance, the Hindu yoga philosophy considers the body the dwelling of the soul. The human being can gradually free himself of the bonds of both his body and his mind through meditation and asanas, or yoga practice; he can therewith even learn to control his mind and some functions belonging to the sphere of the autonomous nervous system and eventually attain the highest degree of spiritual consciousness: a state of enlightenment. In this state man feels free of material as well as social restrictions and can be united with the universal, or divine, spirit. According to this thinking, an experience of individuality is barely an illusion, or maya. (Claxton-Ageha 1981, 77-97; Coan 1977, 83-87; Feibleman 1976, 50-52; Ornstein 1977, 198-200)

In Western thinking today, especially humanistic psychology stresses the problems of the human mind as well as the problem of spirituality. Humanistic psychology is based on the tradition of the study of man. Its origins lie in the idea of man as a being with self-consciousness. Man has an ability to conceive himself as a self, and he can through I-you relations become aware of the existence of the inner worlds of other selves (Krohn 1981, 15). Significant is not only the human consciousness of self but also a consciousness of the world and the question of the spirituality of man which arises as man ponders the problem of his own humanity, the question of his own origin, his destiny, and the meaning of life (Ketonen 1981, 55-56).

According to von Wright (1981, 152, 165-173), humanistic ideas or attitudes are not historical constants. The core of humanism consists of defending all that is for the better of man. Today's humanism cannot, to the same degree as before, stress the right of an individual to self-realization; instead, emphasis should be shifted towards interhuman solidarity. This change of attitude has been made necessary by the relative shrinkage of the earth with the development of the systems of communication. We have become more dependent on each other on this planet.

In accordance with its basic theses, humanistic psychology is not built around such a uniform theory as, for instance, Freudian psychoanalysis. And it will be unable to formulate one because its objects of observation - human existence, its significance, and its basic qualifications - are not bound to any particular period of time, place, or culture. Freudian psychoanalysis, for its part, stems from the culture of continental Europe at the turn of the century and the patriarchal family model prevailing at that time.

The basic methods of research of man in humanistic psychology are Husserl's phenomenological analysis (Krohn 1981, 88-99) and Heidegger's hermeneutics whose roots lie in Kant's transcendental analysis of the status of subject in our knowledge (Krohn 1981, 28-31). Although humanistic psychology stresses the philosophical analysis of man, it does not reject empirical studies.

Husserl sees all psychic as intentional, or suggestive, and as characterized by so-called acts. In other words, the psyche acts as a revealer of a phenomenon in the process of conception. The knowledge acquired in the act of perception is universal even in the sense that the conceiving mind realises its truth to be independent of the existence of humanity (e.g., 2 x 2) (Husserl 1950; Krohn 1981, 89-95).

For Heidegger, man is not the abstract consciousness of Husserl and Kant but an existing human being, i.e., a unique and concrete entity. So for him, subjectivity is individual rather than general. Heidegger stresses man's immediate experience of the world and of himself: To be a human being is to be in the world. (Heidegger 1941; Krohn 1981, 125-132; Nieminen 1981a)

According to Coan (1977, 277-278), who has not only applied the hermeneutic method to an analysis of the conception of man at different periods and by different cultures but has also endeavored to examine its nature through empirical studies, the following aims stand out in humanistic psychology: human independence, freedom and possibility of individual choice, uniqueness and personal integrity of the individual, as well as an effort rather to understand human behavior than to predict and control it. Human essence lies in intentionality, values, meaning, and goal-direction.

According to Frankl (1978, 119), who has long experience with psychiatric patients, the human being is not one object among others; objects determine each other, but man is ultimately self-determining. Within the limits of endowment and environment, man realizes his objectives. He becomes what he has set out to become. The real aim of human existence cannot be found in what is called self-actualization; instead, human existence is essentially self-transcendence rather than self-actualization. Man has to bear his inability to rationally understand this absolute meaning. Logos, or meaning, is beyond logic (1978, 101). It is characteristic of human behavior that man is intentionally directed towards his objectives starting from values and purposes that act as causes and motives. If self-transcendence is denied and the fulfilment of meanings and values prevented, they are replaced by conditioning through concealed brain-washing (1981, 52). Frankl (1981, 46) sees the self-transcendence of existence as referring to the fundamental fact that being human means relating to something or someone other than oneself, be it a meaning to fulfil or human beings to encounter. Frankl wants to emphasize that man, despite his diversity, is an entity and authentic as such. His relation to the world is to be open; equally important is a sound balance between activity, receptivity, and creative potential.

Rauhala (1978, 3-7) describes man in terms of existence and situational regulative circuits and thus pursues a theory in which the contradictions of other conceptions of man would either be solved or rendered oblivious. He considers man's form of existence unique in the reality known to us. Man is realized in different hierarchic systems, like the atom, molecule, cell, organ, organ system, organism, consciousness, and is, in addition, associated to supernatural systems, like social groups, societies, and cultures (Rauhala 1976, 115).

The basic forms of human existence are situationality, organic life, and consciousness. Man is the dynamic totality of these basic forms, an entity of plurality. A situation is the part of reality and the world which a human being stands in relation to. The world exists regardless of man and constitutes a more primary element than man. Man is related to the world through his situation. A situation is the totality of all those phenomena, objects, and circumstances which govern and regulate the realization of the organic and conscious existence of an individual human being. Its composite elements comprise genetic factors, educational effects, situations within a family, schools and schooling, occupational life, cultural, social, and geographical conditions, language, values, norms, the ideal reality, etc. Thus a situation in a certain way constitutes rather a part of man than an external cause for human existence (Rauhala 1978, 3-5).

Consciousness includes the wholeness of human experience. It is characterized by intentionality and directedness. The central function of consciousness is the formation of relations of meaning. These relations of meaning are developed in the course of life of a human being.

Bodily brain function and the world constitute the conditions for experience. Experience comprises the various types and levels of intentional relations of man with the world and with self. Consciousness understood as the entirety of experience is manifested in the rationality of acts of conception of the world or of one's own existence. However, not all contents of the mind, e.g., spiritual components such as sanctity, are intentional.

Conceptuality and language are, in this approach, just one form of high-level organization of experience and, hence, a special case of the organization of mindedness. So, in this philosophy even the various states of arousal, the basic moods, and experiences are considered contents of meaning that differentiate the world and one's own experiences (Rauhala 1981, 3-5).

According to Rauhala (1978, 13-14), the conditions and realizations that represent the various forms of human essence are a continuous microdialectical system in the situational regulative circuit. More than anything else it is the capacity to continuously influence his own existence and fate by his decisions that makes man unique. It follows that a human being is responsible for his own existence.

Rauhala (1978, 2-4) does not make a distinction between the spiritual and the psychic but considers both in the first place as occurrences within consciousness. The leading principle of the above conception of man is a relatively theoretical outlook. The situational regulative circuit is exactly the kind of relational system in which different phenomena have their own position and significance. This renders useless separate monistic, dualistic, and pluralistic as well as idealistic and materialistic conceptions of man. Namely, this conception of man includes the essential elements of all of them, both in its understanding and its research of the human world (Rauhala 1978, 2-4). Rauhala's man is realised in the different forms of existence each of which leads empirical research into separate problems of its own. But man is nevertheless an entity a fact which should also be taken into account in empirical research. This problem is not solved by Rauhala's conception of man, nor does the latter offer any model within which different results of research can be coordinated into an intellectual unity.

Rauhala's conception of man is not unique. But it is true, it may be more complete in its concepts and logic than other corresponding conceptions. Moreno (1964, II-IV), among others, has presented a somewhat similar solution to the problem of human existence. In his solution, he attempted to bridge the gap between the various sciences that study human existence, e.g., between physiology, psychology, sociology, and anthropology. This bridge is a role concept which seeks to unite these sciences on a new level. Moreno's conception of roles differs from the one adopted from social sciences. He defines a role as a concrete, functional aspect of the ego. It is a combination of collective and individual elements. In a way, the role is a relationship because it establishes the individual in relation to other people and the society. Its function is to direct human action.

Moreno distinguishes three kinds of roles: physiological, psychological, and social, but he also talks about the relation of man to the cosmos, i.e., to God. Moreno's conception of God deviates from the ones adopted by the various religious communities. To him divinity is present everywhere and it is identical with creativity. (Moreno 1964, XII, 31-33, 44-46)

2.2.3. The basic conceptions of man in view of this study

The former sections of this chapter have been an attempt to survey the conceptions of man in effect during 1950-1980 and the changes that have occurred. It is apparent from the exposition that, although the prevailing conception of man in the 1950's was a biological and empiristic one it was not the only philosophy with influence; along with the behavioristic tradition of research the ideas of phenomenology and humanism also found expression (cf. Kaila pp. 13, 27). At the end of the 1960's, the behavioristic and psychoanalytical conceptions of man and the neopositivistic ideals of research came under criticism even in our country (cf. pp. 14-15), but it was not until the 1970's that a serious analysis, alteration, and broadening of concepts took place. The conceptions of man of humanistic and Marxian philosophy became more widely known in the 1970's but at the same time also a renewal of behavioristic and psychoanalytical theory has taken place.

Recently, the body-mind problem and the determination of behavior have anew become issues of discussion. The above exploration of the mainly behavioristic, dualistic, materialistic, or spiritual theories published during 1970-1980 has been made from this view. All of these theories present some essential side of human existence but none is able to offer a uniform, solid picture; instead, each one emphasizes the factors suited to its point of view. Nor does anyone offer an empirical model of research for the observation of human unity - the individual scientist has to formulate his own uniform perception of man by integrating different results of research.

The cybernetical or systems theoretical models proposed, e.g., by Ahmavaara (1970) and Kossakowski (cf. 26), so far, have not, proved empirically functional in psychology. Their organizing effect on the thinking of the scientist is of course apparent.

The behavioristic approach (cf. p. 19) emphasizes the biologically determined functions of man, but its application to the study of higher-level human processes appears unnatural and, in this study, impossible.

Behaviorism still has an important research task in the determination and analysis of the biological limits of the psyche. Contrariwise, the attempt of Bunge (cf. p. 19) to transform all psychic processes into neurophysiology is doomed to failure. A great deal of human activity is teleological and inexplicable as a special case of causality. Nor does the doctrine of the emergent factor rescue Bunge's theory. This is not, however, intended as a denial of the possible identicalness of some psychical and physiological reactions.

The enterprise of Bergström (cf. pp. 20-21) presents new stimuli for the study of the relation between the psyche and materia but it does not solve the problem of the psyche.

Eccles and Popper (cf. pp. 21-23) have further developed the Western dualistic conception and the view of an interactional relationship. They have made clarifications to the idea of different relations of the psyche and materia on different hierarchic levels of psychic activity. The psyche that is functional in human activity of higher degree is not reducible to materia but operates independently of it. Materia is nevertheless a qualification for its existence. Thus, for example, the self-conscious mind directs activity. The Marxian and humanistic psychologies have reached roughly the same conclusion. Also Popper's model for the classification of knowledge appears useful and corresponds in part to the ones presented by, e.g., Moreno, Rauhala, and Rogers (1964, 117-118). The failure of Popper to describe intersubjective (social) knowledge as a separate entity distinguishes Popper from the others presented above.

Though the Marxian and humanistic psychologies have some philosophical background in common, they are decidedly different with regard to matter and societal philosophy. Matter is primary in the Marxian conception of man (cf. pp. 25-26) and man is observed from a societal, historical, and cultural angle. The entire conception of matter is problematic in Marxian psychology. It is true that the content of this conception has continually changed with the progress of natural science but this adjustment of content cannot constitute an eternal solution to the definition of the basic relation between spirit and matter.

In comparison, humanistic psychology (cf. pp. 28-33) emphasizes more the individuality and uniqueness of a human being. It is based on the tradition of the study of man that has its roots in the philosophy of Socrates and Plato, the most prominent representatives of which have been Kant, Kirkegaard, Husserl, and Heidegger. The central element of this so-called philosophy of existence is man's ability to acquire objective knowledge about himself and the world; the essential task here is the analysis of the subject-object relation. Man is seen as a conscious, self-conscious, and conceiving being and as one that forms relations of meaning. His most important trait is spirituality. Corporality and the world - society, social relations, nature, and space - constitute the conditions for the appearance and development of humanness. Human life is intentional; in it freedom forms a condition for responsibility which increases with the development of self-consciousness concurrently making true choice possible. Freedom is limited both internally and externally.

Humanistic psychology has not so far produced a clear system of concepts or a research policy. Quite heterogeneous publications and even mystic models of action have been produced in its name (cf. Wertheimer 1978). But when theory formation within humanistic psychology is tightly linked to the tradition of philosophical thinking in the manner of Coan, Frankl, Giorgi (1970), and Rauhala, it does fulfil the validity criteria of a science. Humanistic psychology is above all interested in the higher-level psychic and spiritual activity of man. Its angle is man as a historical and cultural being that is capable of forming contents of meaning.

In this study, the function of the school as a social institution is considered to consist primarily of the preservation, transfer, and creation of culture. Hence, the cultural and historical factors are emphasized in the existence of teachers as human beings.

The most natural basis for the study is then the conception of man of humanistic psychology. This will not, however, be adopted in a dogmatic way but linked with factors from other perceptions of man whenever relevant to the study.

The relation between the psyche, spirituality, and materia is considered complex. Materia as expressed in human corporality is a condition for the psyche and spirituality: There is some interaction but this is not straightforward. Materia, as well as the psyche and spirituality, possesses some independent activity. Also the world - the society, social relations, nature, and space - is seen as a qualification for the existence of psyche and spirituality. This conception is an attempt to combine the ideas of Popper and Eccles (cf. pp. 21-23), Krohn (cf. p. 23), and Rauhala (cf. pp. 30-32). Man is considered a conscious, self-conscious, and conceiving being who forms contents of meaning that he uses for directing his actions (cf. Krohn p. 28; Rauhala pp. 30-32).

The way in which man endeavors to perceive himself and the world as organized entities is here considered most essential. Man acquires subjective, universal, and unique knowledge (cf. Kant p. 29; Heidegger p. 29). Self-conception is born in self-reflection (cf. Lesche p. 24), and here the subject-object relation is essential. Marxian, as well as humanistic psychology, emphasizes the significance of work for man and the role of the society as a condition for the realization of man's purpose in life (cf. pp. 25, 30-31).

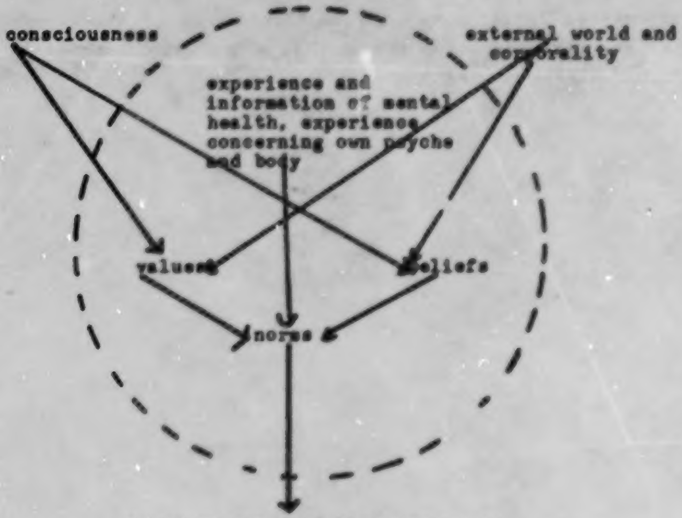
Both the psyche and spirituality are phenomena of the consciousness. Contents of meaning are considered essential manifestations of the psyche. Not all phenomena of the consciousness are intentional and teleological but a majority of them - and all those that are objects of this study - are. (Cf. Rauhala pp. 31-32)

Spirituality forms the core of personality, and its attributes are depth, layeredness, and authenticity. Spirituality is manifested, i.a., in art, religious feeling, sense of morals, and the meaning of life (cf. Frankl p. 30; Kaila pp. 27-28). A human being has objectives and sets out to fulfil his meaning in life. Qualifications for freedom are understood to include external factors (set by factors of the bodily, social, and physical environments) as well as internal (either inborn or acquired) elements. Man's freedom increases with the growth of self-knowledge and concurrently truely choosing becomes possible.

In his uniqueness man is also historical and cultural. It is, indeed, the aim of this study to survey those universal contents of the meaning of man. It has been pointed out earlier that the intention here is to survey the manifestations of the consciousness of teachers, and the interrelations and developmental trends of these manifestations.

Figure 2

A scheme of the contents of consciousness and their manifestations from the angle of mental health in this study


consciousness
external world and corporality
experience and information of mental health, experience concerning own psyche and body
values
beliefs
norms

Manifestations of consciousness:
(contents of meaning)

- expressed attitudes to mental health
- evaluations of own mental health, human relations, self-esteem, and realisation of objectives
- projective expressions and other bodily contents of meaning
- relationship to religion

3. PERSONALITY, ITS STRUCTURE AND QUANTIFIABLE DIMENSIONS

3.1. Personality

Above (cf. p. 33) we have seen that in the psychological literature there is no uniform, solid conception of man; nor is there any universal, internally consistent conceptual language for personality description. Personality is treated both as an individual and as a collective phenomenon; the individual is described both as a subject and as an object. The primary problem in the study of personality is how to develop useful ways of organizing or conceptualizing personality structure and function. Despite differences of angle of observation, the various theories all present a conception of personality as a unified and dynamic organization. Of the representatives of humanistic psychology, i.e., Angyal (1969) describes personality as a unified dynamic organization, or continuous process. He conceives human life as an organized, programmed form, Gestalt, which is a result of personal human decisions and an effect of the surrounding world as well as of the life situations of the individual. Psychoanalytical theories emphasize the hierarchic and dynamic nature of personality. Sarnoff (1962, 23-29, 36-37) describes it as a product of varied forces, which develops gradually in a social environment.

The social psychologists, in particular, have observed personality from the angle of the community and define it as the social stimulus value of an individual (Hall & Lindzey 1957, 8). Psychologists of the socialist countries, on the other hand, emphasize the societal nature of personality. According to Leontjev (1977, 27), personality is a special characteristic adopted by the physical and biological individual in the system of societal relations. Galperin (1979, 133-134), for his part, considers personality as a societal-historical phenomenon the most prominent structure of which is the human consciousness that develops only in interaction with the external world. Personality does not appear as a mature structure at birth but is, according to Galperin, shaped along with the development of the individual; consciousness is its most essential part. The East Germans Erlebach, Ihlefeld, and Zehner (1974, 85-89) describe personality as a system that is born in concrete life activity, in the interaction of internal human qualifications and processes with the external environment.

In light of the lack of unification in both personality theory and personality measurement, Lanyon and Goodstein (1982, 35) think the best approximation to be that personality is an abstraction for those enduring characteristics of a person which are significant for his/her interpersonal behavior.

In this study, personality is conceived as a dynamic unity of which the universal factors, or dimensions, can be measured. These are considered to form either quantitative continuities like the speed of reaction or both quantitative and qualitative hierarchic systems like the Genetic Level of Becker (1956) (cf. Appendix 13). Dimensions of the latter type acquire an ordinal scale corresponding to the hierarchic levels. Personality comprises, i.a., the cognitive processes, the perceptual modes, and the factors of social orientation all of which are important, even as factors of mental health. Personality and mental health are not, however, identical as concepts. The fact is that the concept of personality is not value-bound like mental health.

The following attributes of personality were mentioned above (cf. pp. 10-11) as essential attributes of mental health: the functions of the ego and the self as integrative processes, ego identity, self-esteem, consciousness, the ability to solve problems, coping-behavior, creativity and adaptive regression, the defenses, the manifestation of outer or inner conflicts as anxiety, guilt, and aggression. These concepts are metapsychological, best known in dynamic psychology. In the following chapters they will be described in detail to provide a basis for their subsequent operationalization.

3.1.1. The concept of ego

Hartmann makes a clear distinction between the concepts of ego and self. According to him, ego is not identical with personality or the individual, nor does it indicate the subject as an opposite of the object. The ego does not mean the conscious part of personality or self-knowledge; instead, Hartmann defines it as the infrastructure of personality the nature of which is determined by its functions (1964, 114). These functions of the ego include perception of the external world and of oneself and the organization and regulation of these perceptions. Ego constitutes a protection against the outer world as well as against inner impulses. It forms a test for reality; both action and thinking belong to its functions. The most important of the tasks of the ego are thus the coordinating, integrating, synthesizing, adapting, and defending functions. The concepts of ego control and ego strength are employed in association with the examination of, on one hand, the ability of an individual to preserve his identity and, on the other, his capacity to adapt himself to the conditions of living offered by the environment (Hartmann 1964, 113-181, 268-296; Mahler 1968, 10; Mahler et. al. 1975, 6; Pietarinen 1977, 15, 31-34; Sarnoff 1962, 148-171; Spitz 1962; Vuorinen 1983/1, 31).

According to Mahler (1968, 9-11) and Spitz (1962, 20-23) the newborn child is in an undifferentiated state, the psyche and the soma are indistinguishable, and there exists no integrative ego although some ego functions can we observed. This rudimentary ego is the body-ego. In the beginning, it works mainly in the direction and control of the functions of the body, in their adaptation, but gradually it becomes more and more a reality-testing element.

Loevinger (1976, 5) wants to restrict the concept of the ego to apply only to the development of character. Loevinger describes the development of the functions of the ego in terms of an organic unity; hence, ego is an organization.

The concept of ego-identity is derived from the theory of Erikson (1963, 261-263). He sees as its function the integration of former identifications, present ideals, and social roles into a uniform identity. Ego-identity is developmentally the highest organization in the process of internalization. It is affected by social stimuli and its role is, vice versa, central in the success of social relations.

In this survey, the ego is primarily understood as the infrastructure of personality with information and experience-gathering, coordinating, integrating, and synthesizing functions. Although ego is a metapsychological concept and not observable as such, its functions can be operationalized and measured in empirical research.

3.1.2. The concept of self

The concept of self denotes a certain entity whose nearest equivalent is the person, but there exist differences of nuance between the concepts of person, mind (or soul), and self although both the former contain some elements of the latter (Mischel 1977, 3; Popper 1977, 100-102). Popper thinks that self not only comprises a knowledge of our existence (self-awareness) but also a consciousness of ourselves (self-consciousness) as well as a feeling of continuity of existence (self-identity). These conceptions of self are not inborn but acquired (Popper 1977, 109).

The concept of self has been approached in two ways in psychological theory: nomothetically and ideographically. In socially oriented studies the formation of self-conception is described through a process known as the mirror principle (feedback from the environment). It is just this fact which makes the human being capable of seeing himself as an object and also of role reversal, i.e., of putting oneself in the position of another person. (Mischel 1977, 1-28; Wells & Marwell 1976, 14-18)

The concept of self has also been adopted into the theory of social learning. Bandura (1978b) describes the self as a very prominent factor in the development of an individual. He sees its development as taking place according to the principle of reciprocal determinism. According to Bandura, psychic activity causes a continuous reciprocal interaction between behavior, cognitive processes, and external stimuli. The self is the most important effector in this interaction. This conception of the self as an effector in reciprocal determinism can be documented in an analysis of the reciprocal self-regulative process. The self-system of the theory of social learning is no psychic agent which controls behavior but a cognitive structure presupposing reference mechanisms: the subfunctions of perception, evaluation, and behavior.

Rogers (1951) has been a notable developer of the phenomenological theories of self. He observes the self as an object in a phenomenological field where it forms a part of a phenomenological system recognized as self, I, or me. Self-conception has been organized and homogenized into the conceptual perception that the individual has formed of himself and of which he is conscious. It comprises the observations of oneself in relation to others as well as values, objectives, and ideals (Rogers 1951; 1959; 1965; Viitamäki 1978, 87-92).

Until the present time, the concept self has had little significance in psychoanalytic theories. The term did appear in the texts of Freud, Jung, and Adler but its usage was not established. They understood the self phenomenally as the individual's conception of his behavior, body, and personality. Thus defined, it has a content clearly different from that of the concept ego. Horney, Fromm, and Sullivan emphasize the social and cultural origins of self. Recently, psychoanalysts have become increasingly interested in self. Especially Kohut (1966; 1968; 1971; 1972; 1977) and Kernberg (1974; 1975; 1976) have been active in the development of a psychoanalytic theory of self. Kohut (1977, 284) as well as Wolf (1977) consider the interest in self as rising from an actual need existing today. Disturbances of self-esteem are more common today than before; instead of neurotic symptoms it is the manifestations of pathological narcissism, which are connected to disturbances of early object relations, that constitute the major problems in mental care. Pathological narcissism is an important disturbance of the development of self.

Normally, if the relationship of a child and the nurse is successful, the nurse (usually the mother) becomes the first object of affection for the child; the nurse is a mirror-object and a source of values and ideals. Perpetual frustrations in the nurse relationship cause the narcissistic disturbance of personality described by Kohut which is expressed as undue interest in oneself, as expansion of the self (grandiose self), i.a., as mystic, ecstatic, primitive, or idealized self-object fusions, self-glorification, illusions of omnipotence, but also as hypochondric symptoms. Both Kohut and Mahler (1975, 54-55) stress that in the development of self, the body self, an awareness of one's body, is important. Narcissistic forms of behavior are characteristic of a child, nevertheless they even out with age. Some narcissism is necessary, though, as a foundation for an individual's healthy self-esteem and self-confidence.

Manifestations of normal, mature narcissism are creativity, humor, a capacity for empathy, wisdom, and the acceptance of transience, i.e., mortality (Wolf 1977).

Narcissistic behavioral disturbances are not always connected to early disturbances of personality. They may be of later developmental origin, e.g., when they appear as defenses of a weak self-esteem or uncertain sexual identity. In pathological narcissism, the self is the center of action, and thus a question of distorted development of self. (Blanck & Blanck 1974, 74-88)

Kohut, like many other self-theorists, makes a distinction between the concepts self, identity, and personality. Identity is not a depth psychological concept, it is sooner a sociological one. The most recent psychoanalytical theories consider the self not only as a conscious phenomenon but also as a structure within the psyche. It is represented in the different abstraction levels of personality: the id, the ego, and the superego. The self is the center of the entire psychic life of an individual; it has both temporal and locational stability and continuity. Kohut's concept of self and the theory of narcissism have been much criticized, but in a recent review (in Goldberg, ed., 1978) he and his colleagues submit their ideas to empirical testing by demonstrating the concreteness of their concepts and the functionality of their theory through presentation of minutely analyzed cases.

Burns (1979, 148-168, 183-184) has made a synthesis of the theories of the development of self. He names the following as the most essential sources of the self: body image - an evaluation of the physical self as a distinct object; language - the ability to conceptualize and verbalize about self and others; interpreted feedback from the environment about how the person stands relative to various societal norms and values; child-rearing practices.

Wylie (1961; 1968) and Viney (1969) have made extensive surveys of the history of the concept of self and its application in empirical research. In this research, self-conception and self-image have been observed from several angles: the real and ideal self, the social and private self, one's own ideal self, the ideal self of the individual as conceived by others, and the various roles. The concepts of self-esteem and self-regard have also been frequently employed in research (Wells & Marwell 1976, 148-201).

A wide agreement should be reachable on the following contents of the concept self. The self is phenomenal as a concept. It is not observable in itself because of its indivisible subject-object nature, nor is it entirely conscious as a phenomenon. Self is not synonymous with the concepts personality, ego, or identity. Identity is a later product of development and it is bound to social relations, i.a., roles. Self is a structure composed of the psychic and somatic aspects of the ego that become conscious gradually in environmental interaction. The functions of the individual ego produce in the consciousness images, representations, of the psychic and material factors of the self. The totality of these representations can be called self-image. This self-image is continually changing, layered, but it is experienced as a uniform picture. The ego, on the other hand, also acquires and coordinates knowledge external to the self. It is apparent from the above that although the ego and the self are non-identical, they do share a common area within personality.

In this survey, the self is conceived as a continually changing, uniformly experienced conception of oneself. The concept self will also be used as a metaconcept of ego and self because this usage of the concept is established in philosophical language. If an area of self is conscious, the term self-conscious will be employed and it will be surveyed through self-evaluations in the study.

3.1.3. Consciousness, awareness, and the hindrances to these

The most essential problem in mental health was seen above to be constituted by the understanding of the world and of the organism itself by the human mind, i.e., the problem of consciousness and awareness (cf. Rauhala p. 6). Consciousness is associated with the concepts of self and ego but it is identical with neither. Both of the latter also comprise non-conscious elements. The concept 'contents of consciousness' is conceived in slightly different ways in various theories.

Freud didn't consider all human activity as conscious; instead, repression and other defenses make the behavior-determining knowledge of the outer world and of oneself limited and selected. Psychoanalysis has the clear aim of aiding the individual in extending his intrapsychic consciousness and bodily awareness and thus to help him adapt to reality and behave rationally.

Marxian psychology emphasized the conscious nature of man as well as the societal origin of this consciousness (cf. p. 25). Leontjev (1977, 39), among others, defines consciousness as a product of those particular societal relations that people engage in and which are realized through the brain, the senses, and the functional organs. According to Luria (1979, 80-84), the roots of human consciousness should be sought in societal-historical life activity, which is expressed in work, in the use of tools, and in symbolic language. These particular phenomena effect such structural changes in the human mind that a consciousness is born.

Popper (1977, 124) as well as Ornstein (1977, 43) consider the development of consciousness a teleological process and, in their biological approach to the problem, they conceive consciousness as a product of the struggle for existence and a condition for survival. According to Ornstein, personal consciousness is extrovert and active and it works for its main purpose, the survival of the individual, by manipulating objects, predicting dangers, and by striving for independence. Popper assumes consciousness to be born out of four biological functions: pain, pleasure, waiting, and attentiveness. The last one he considers closely corresponding to consciousness. The brain is the location of consciousness because the function of the central nervous system has been, from the start, to direct and steer the locomotion of the organism.

Somewhat different from the aforementioned are the contents of the concepts of consciousness and awareness that occur in humanistic psychology and in Asian thinking. They do not contain an objective of rationality, or reason, nor do they necessarily presuppose analysis or symbolization; instead, they aim at openness and expansion of experience (supra-intentional reality) (Coan 1974, 15-16; Rauhala 1969, 57-59). According to Ach (1959, 24), this can be defined as consciousness that does not include mental images; it could be named the consciousness of experience. Claxton-Ageha (1981, 53-54) says that awareness is another name for the subjective experience of learning. Whatever an organism is aware of, that is what its learning is about. These two forms of consciousness (consciousness and awareness) are assumed to be localized in different areas of the brain. With a right-handed person, consciousness is primarily associated with functions of the left, or dominant, hemisphere of the brain and awareness with the right hemisphere (Ornstein 1977, 22-39). The Eastern conception of consciousness also comprises cosmic consciousness, which is reached in transcendental experience. The above theories have observed the problem of consciousness from various angles. They do not exclude each other; on the contrary, they are mutually complementary. They can be said to form a spectrum of consciousness which reflects, i.e., the perspectives of individuality, societality, and unity and the different levels of consciousness, that is, the various states, or forms, and hierarchies of consciousness.

Every community influences through education the individual acquirement of knowledge in a way dictated by its fundamental objectives. In a way, the community thus sets the limits for individual consciousness, determines its orientation, form, and level. Where the biological structure of the organism sets the neurophysiological filters, the community produces the conditioned social sieve. Hence, consciousness is bound by culture and the experiences and models of thinking produced by it (Walsh 1980).

When optimal scope of consciousness is pursued, then all kinds of experiences - symbolic as well as those without mental image, external as well as those derived from inside the individual - should reach a conscious level, be identified, and differentiated. The broader and deeper the scope of consciousness, the more exact and realistic the self-conception formed by the individual. The individual is then able to integrate into it the biological, psychical, spiritual as well as social forms of existence, and likewise to change his environment and at the same time to adapt himself to the role of man in the universe.

In this survey consciousness has been taken to include both cognitive and experiential forms and also various hierarchic levels: self-consciousness, self-awareness, social and societal consciousness, and the open experiencing of the external world. Consciousness is not measureable as such but it always constitutes an element in the sensation, perception, and interpretation of objects and processes. Consciousness is thus rendered observable in association with the conception of these phenomena.

The problem of consciousness is clearly perceptible in situations where the human being encounters or handles conflicts or stress. The most effective and conscious models of behavior in these situations are problem-solving or coping behavior, and the defenses; problem diminution or flight are not equally effective. Coping, as defined by Haan (1965; 1977, 34), comprises well-adapted, selected, flexible activities which are logical and take heed of intersubjective reality, but which also allow the adequate experiencing and expression of emotions. In coping behavior, man is an open system receiving and processing information. These models of behavior include cognitive strategies based on logical analysis, control of fear and anxiety, and various forms of compensation as well as the adaptive employment of regression in the service of the ego. (Holt 1978, 235-236; Kris 1951, 483-493)

Rechardt (1978b, 102-104) and Tähkä (1970, 27-36) define defenses as functions of the ego that form a protection against mental pain or help to overcome it according to the principle of the least evil. Defenses of the ego mostly operate in an automatic manner and are thus beyond consciousness. According to Rechardt and Tähkä, defenses are indispensable in processes of psychic adaptation but their excessive activity leads to disturbance. They describe denial, projection, introjection, intellectualization, displacement, repression, and regression as the most common defenses.

In defensive action, the frightening impulses are controlled in a forced way with avoidance of full confrontation of the problem. This produces a negative, rigid reaction distorting intersubjective reality and logic and turning the organism, as receiver of information, into a partly closed system. These processes have also been described in empirical research and on a neurophysiological plane. (Haan 1977; Bowlby 1980, 44-74) Neuman (1978) has in his studies tested the hypothesis that defenses form a hierarchic system which corresponds to the earlier stages of development and the perception-response model of the individual.

It has been described above how the objective of the defenses of the ego is to control the anxiety caused by inner impulses as well as outer threat in cases where it cannot be taken care of through coping behavior. If external or internal threat cannot be subordinated to control by personality, the consciousness of an individual becomes narrow or diffuse and the adaptation of the individual to his environment is hampered. Anxiety, hostility, and aggressiveness constitute some of the most troublesome manifestations of maladaptation in working life. They cause friction in human relations as well as inefficiency at one's job. Nevertheless, when they only occur to a minor extent or when their occurrence is under control, they can be a source of energy and a stimulus to activity.

Severe states of anxiety indicate deranged development of personality and they are manifested in most diverse forms of behavior such as various openly expressed defenses or somatic symptoms. It is just this diversity of the expression of anxiety which renders this concept vague and difficult to define. Fear, phobia, and insecurity exist parallel to each other but the question of their correspondence to anxiety is difficult to settle.

Feelings of anxiety can be provoked by sudden changes of circumstance, conflicts, disappointments, abandonment, or exposure to hostility. The different forms of anxiety include, i.a., free-floating anxiety and anxiety directed at a certain object (i.e., phobia), normal anxiety whose occurrence depends on circumstantial factors, and neurotic anxiety which is associated with long-term intrapsychic disturbances of personality development.

The capacity of individuals to withstand fear and anxiety varies. The better the integration of the personality of the individual and the stronger his self-esteem, the greater his capacity to withstand and control anxiety. (Sarnoff 1962, 190-196; Ausubel & Kirk 1977, 228-250)

Aggressiveness, hostility, anxiety, and self-guilt are intertwined in a complex way and occur simultaneously. They may be difficult to describe and survey separately. Ausubel and Kirk (1977, 250-253) assume feelings of aggression a rise, on one hand, from internal impulses but, on the other, they may also be signs of inner insecurity. Whether hostility is expressed as open aggression or as a grudge depends on how the individual controls his impulses. E.g., narcissistic personalities show more acting-out behavior than normal individuals, who handle their aggressive feelings more with fantasy (Keltikangas-Järvinen 1982).

Aggressive emotions easily provoke self-guilt in the individual and counteraggression in one's fellowmen. A chain of aggressiveness and reproach may thus be formed in the consciousness of the individual, but also the environment may develop a vicious circle of these feelings. Cultural expectations can be such that aggressive emotions should not be expressed however justified or controlled they may be. They have to be repressed, which binds one's energy.

Anxiety, aggressiveness, and hostility can be conscious or unconscious. This study will try to survey both of these forms with self-reports and projective techniques as its methods of research.

3.1.4. The role of attitudes in the energetics of personality

Attitudes have gained little attention as objects of research in clinical psychology and in psychoanalytical publications. The survey of attitudes has mainly remained the task of social psychology. Attitudes nevertheless prove very significant in the planning of models of operation of preventive mental care and psychic rehabilitation.

The social and educational psychologists especially have studied attitudes from a structural angle. In 1960, Rosenberg and Hovland presented a three-component theory according to which attitudes have three groups of structural elements: the affective, the cognitive, and the behavioral. These components tend to combine in such a way that manipulation of one effects a similar alteration in the other two. This tendency of combining has been explained applying the concepts of Festinger's cognitive dissonance and Bem's theory of self-perception (Smith 1976; Bem 1976). The three-component theory of attitudes has been criticized. According to some results, there is only weak conformity between behavior and cognitive attitude. The theory nevertheless has its proponents (Eiser 1979). In Finland, the theory has been tested, e.g., by Karvonen (1967; 1970/67) in connection with an analysis of the attitudes of teachers and their alterability.

In this study, however, the main emphasis is not as much on the structures of attitudes as on their functions and their significance in personality. Attitudes have adaptive functions similar to those of the defenses of the ego although they are not identical. One can observe attitudes from the viewpoint of the energetics of the individual or as products of the interactional relations of the community, i.e., as essential contents of culture.

Allport's definition (1976, 20) of attitudes includes the neuropsychic state of readiness for mental and physical activity. Sarnoff (1962, 164-171) examines attitudes as functions of the ego. He sees them as an attempt to resolve a motivational conflict, and gives the definition: Attitudes are dispositions to react favorably or unfavorably to a class of objects.

Attitudes may be conscious, in which case they are the end products of a cognitive process and parallel to the conscious and accepted motives that lie behind them. The level of consciousness of attitudes runs on the axis conscious - unconscious. Unconscious attitudes are based on unconscious, repressed, or conflicting motives expressed through non-verbal communication, e.g., facial expressions and gestures. They can operate as derivatives of the defenses of the ego.

Sarnoff describes the development of negative attitudes through fear and the aggression associated therewith: The individual wants to shelter himself and draw away from the frightening object. If this fear is not conscious, it is then that an attitude operates as a derivative of a defense of the ego. Even attitudes can be conflicting, e.g., the private and public attitudes of an individual toward the mentally disturbed may be different.

The birth, development, and function of attitudes have been observed from different angles in the different psychological theories, and the resulting variety of emphasis can be regarded as mutually complementing.

> In theories of learning, the adaptive role of attitudes is considered to constitute their main function. In the regulation of the environment by the individual through prize maximization and punishment minimization, the attitude toward an object is determined by individual evaluation of the potential benefit of the object in the pursuit of objectives valued by the individual.
>
> According to the Gestalt psychologists, attitudes have an economic and cognitive function. The individual has a need to perceive his environment as an adequate structure and here attitudes provide a simplified and practical model of regarding a certain object.
>
> Emphasis on the expressive functions of attitudes is characteristic in ego theory and the theory of self. Accordingly, an individual experiences satisfaction and frees himself of inner tensions when he is able to express attitudes that correspond to his personal values or self-conception.
>
> Psychoanalytic theories emphasize the function of attitudes as derivatives of the defenses of the ego. They are thus considered to have a self-protective function so that excessively fearsome tensions and environmental threats are barred from consciousness. In this way, negative attitudes can be a result of, for instance, projection, which renders the association to the object very vague, e.g., the attitude toward the mentally disturbed.
>
> (Heinonen 1979; Katz 1967, 462-464; McGuire 1969, 158-160; Smith 1976)
>
> The cognitive theories of attitude are the most recent and can be said to form an elaboration of Gestalt psychological thinking. They have shifted from the explanation of dissonance to an attribution model. Harvey-Smith (1977) gives the following explanation to the development of attitudes: All phenomena can be understood either as intermediate processes or as end products. The human need for forecasting and controlling events makes him try to explain their cause-effect relationships and to classify and put a mark on events. In this way develop the attributions which serve as a support in orientation. In the case of an individual receiving new information of an event, he usually changes his classification and attitude, i.e., orientates anew. (Eiser 1979)

All of the aforementioned general functions of attitudes are also essential in the attitudes toward mental disturbance and can be substantiated in empirical research (cf. Nieminen 1978; 1979).

One of the functions of attitudes can also be to serve the needs of the community. Hujala (1976) in her study has tested the theory of communal solidarity developed by Allardt (1971, 65-70). According to her results, residents of towns, where there is an extensive division of labor and little pressure for uniformity, are characterized by organic solidarity, openness to new ideas, and tolerance of deviance. This urban population has a more positive attitude toward mental disturbance than have the residents of the countryside. Among the latter there is little division of labor, and the pressure for uniformity and frequent inter-personal contacts reinforce the parallelism of attitudes effecting a mechanical solidarity between the members of the community.

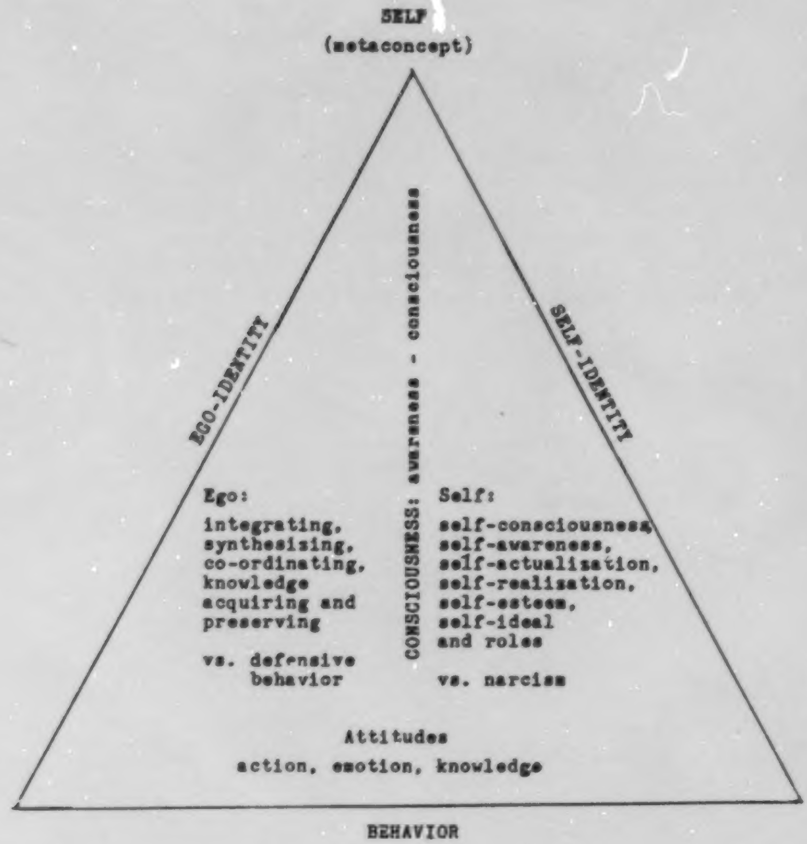
Attitudes can perform several tasks simultaneously. They have most often been studied separately from the other dimensions of personality, the functions of the ego or of self, or from other social relations of the individual. Thus no clear picture exists of their position in the structure of personality or of their function in its energetics. Nor are there enough answers concerning the correlation between attitudes and the defenses of the ego; and, if such a correlation exists, which defenses will it include? Are attitudes born as derivatives of the defenses of the ego and can they be adopted in the same manner as defenses, e.g., through introjection and identification?

Since attitudes are partly cognivite and changeable, i.e., when new or more precise information is offered, familiarity with them is most central in social education. Attitudes are measurable dimensions of personality. This study will survey primarily the cognitive attitudes with the questionnaire method.

Figure 3

THE HIERARCHIC STRUCTURE OF PERSONALITY

A scheme of aspects of personality considered essential in mental health


SELF
(metaconcept)
EGO-IDENTITY
SELF-IDENTITY
CONSCIOUSNESS: awareness - consciousness
Ego:
integrating,
synthesizing,
co-ordinating,
knowledge
acquiring and
preserving
vs. defensive
behavior
Self:
self-consciousness,
self-awareness,
self-actualization,
self-realisation,
self-esteem,
self-ideal
and roles
vs. narcism
Attitudes
action, emotion, knowledge
BEHAVIOR

3.2. The dimensional model of personality

The previous chapter described the hierarchic sturcture of personality and its essential elements. Personality, however, is a metapsychological concept and presents a problem for empirical research.

The above descriptions of the dimensions of a healthy personality contain both so-called objective factors and subjective evaluations, i.e., descriptions and measurements of both actions and experiences. They are not to be examined separately but in relation to each other as described in the model of human existence presented earlier (cf. 31, 35-38). A well-functioning model for this is Coan's model of the optimal personality, which shall be presented next.

In structuring personality, Coan has utilized the statistical-mathematical multivariate model of factor analysis. It not only reveals the most essential independent dimensions of variables but also enables one to examine personality, cf. the studies of Cattel and Eysenck. Coan's way of gathering human data and interpreting it is nevertheless different. He treats human existence on the basis of a humanistic conception of man (Coan 1974, 20-24; cf. pp. 29-30).

Coan has investigated the personality of university students with a quite extensive test battery which, however, mainly consisted of questionnaires, and thus the study was centered on the elucidation of cognitive processes. The tests were performed in groups which partly restricts the choice of aspects of personality. Coan has attempted to elucidate the congruence of objective measurements and subjectively experienced factors. The methods employed by him (1974) measure a phenomenal organization which consists of the way an individual experiences himself and the world, of an individual's values, and of his relation to God, humanism, scientific truth, and esthetic beauty; they also measure individual attitudes, beliefs, self-control, social norms, and reality contact, and survey evaluations of personality and self, models of group-behavior, and various experiences. On the basis of several analyses, Coan (1974, 199; 1977, 290) has drawn up a description of the optimal personality which comprises the following polar dimensions:

a) General openness of experiencing which permits richness or fullness of experience. Its opposite is a stable organization that saves an individual from experiences of pain.
b) Directedness towards harmony, relatedness, and union with one's fellowmen and the world. Its opposite is constituted by differentiation, individualization, and a strive for autonomy, self-adequacy, self-control, and individual achievement.
c) Individual and subjective relation to self and others as opposed to an objective attitude which ensures technical efficiency.
d) Self-confidence and self-command as opposed to realistic evaluation of one's own limitations.
e) Optimistic, confident attitude toward the world as opposed to realistic evaluation of world conditions.

In his description of the deep structures of personality as dimensions, Coan sees both modes of a dimension as potentially desirable but mutually incompatible. When existing as characteristics of an individual, their relationship should be a balanced one.

Coan has further endeavored to survey the ideal characteristics of an individual by applying the hermeneutical method. He has studied the ideal models that mankind has presented of its existence in the course of history. Coan's cultural-historical analysis is extensive. In it are included not only the foremost Western theories concerning the development of personality but also the Marxian and Asian conceptions of man. As a synthesis of the results of his theoretical analyses and empirical studies he again presents five dimensions, which quite closely correspond to the aforementioned dimensions (Coan 1977, 297-305):

a) Efficiency which denotes efficient intellectual, social, and physical action. It does not include stress nor any straightforward strife for competence but sensory efficiency and reality contact as well as lack of physical symptoms. Energy, diligence, and productiveness are the personal manifestations of efficiency and so are self-determination, independence, self-realization, and self-control.

b) Creativity, which is connected to the former dimension, i.a., to productivity. Creativity is here nevertheless primarily understood as the production of novel ideas and objects and an original style of life which comprises absence of stereotypes both in activity and experience. Self-determination is a qualification both for creativity and productivity but the contents of the concept are emphasized differently in the two. As a qualification for creativity, Coan includes independence of the values of parents, friends, and culture, of their way of observing and understanding the world. Creativity contains an openness to new, foreign, and even socially unaccepted ideas and experiences. It also includes the authenticity and spontaneousness of expression. Coan's conception of creativity corresponds to that of Moreno (cf. p. 32; 1964, XII, 31-33, 44-46). According to Moreno's thinking creativity is not manifested as mystic, elitistic, or aesthetic products; it is rather the most eternal, most transcendent form of existence; it is the nucleus of all that is living.

c) Inner harmony consists of adjustment, normality, and experiences of happiness. A well-adjusted person is free from disturbing emotions, inner conflicts. The individual lives in harmony with himself. He has high self-esteem and self-confidence. He believes in his success, which nevertheless presupposes good self-knowledge and openness of experience, i.e., spacious self-conception and self-awareness.

d) Relatedness is a dimension where the relationship of an individual to other people is central. These relatioships include in part the ability to enter into intimate human relations. This is what was essential in the Freudian conception of a mature sexual relationship which involves complete acceptance and appreciation of another human being. Also humanism and altruism are contained in this dimension. The origin of the latter ideals lies in the Jewish-Christian tradition, which emphasizes empathy, social sensitivity, and forgiveness as elements of humanness.

e) In this context, the concept of transcendence indicates relationship to God, divinity, nature, and the ultimate issues of life. It may be difficult to distinguish this dimension from the former because the God-relation of some individuals can be very personal in nature. The concept of transcendence is rather not a collection of theological dogmata but describes a relation to the entire nature and universe. This relation does not include diversified individuality but an experience of unity. Transcendence thus comprises the same phenomena that in this study have been called spiritual or deepmental (cf. pp. 27-28). It has already been mentioned how transcendental experiences often fall outside empirical research in the West because of difficulties of quantification. These comprehensive extremes of experience are nevertheless elements of human life, and as such, they too should be surveyed.

Coan's model contains nearly all the factors of mental health or healthy personality presented hereinbefore (cf. pp. 6-12). Its concepts of efficiency and creativity are emphasized in the Western conception of man whereas transcendence as an objective is stressed in Asian philosophy. The strive towards inner harmony is characteristic of both Eastern and Western thinking but the content of this pursuit may differ. The idea of sociality of our culture is of Christian origin but it is also an essential ideal in Marxism.

The model of the optimal personality presented by Coan offers a basis for empirical research. It observes the essential dimensions of personality but limits their observation to the moment of study and does not discuss their ontogeny. Because its objects of observation mainly consist of cognitive processes, it doesn't either elucidate the level of consciousness of the dimensions of personality. The model provides no solution to the study of the historicity of an individual, of his so-called process of life or, in this study, to the observation of levels of consciousness and the developmental trends of the factors of mental health.

The efficiency of Coan's model has been put to test in an extensive survey of the job satisfaction and mental health of frontier guards (Nieminen 1980b). Although the tests performed differed from those used in the experimental studies of Coan some similar dimensions were found: productivity (efficiency), adaptive regression (creativity), stability of self or of functions of ego (inner harmony), comprehensive reaction vs. isolation (relatedness).

3.3. Process of life

Two traditions have been prominent in psychological studies of the life histories of individuals: to provide explanation for their occupational history or for the development of their mental health. The latter is taken to include physical, psychical, and social well-being. In our country, occupational histories have been studied by Häyrynen and his co-workers (1980a; 1980b). Rahe and his team (1969; 1972; 1974) have studied changes in life as a risk to somatic and mental health; a member of his group, Romo (1977), has performed the part of the project concerning Finland. The latter survey demonstrated that sudden changes in life (e.g., deprivation of spouse or loss of job) as well as lifestyle can contribute to the occurrence of somatic conditions such as coronary disease.

In research on the process of life, it has been demonstrated that a person not only preserves a feeling of coherence and identity throughout his life but that even some other aspects of personality remain surprisingly stable for decades (Birren 1964, 223-249; Livson 1973; Rubin 1981; Vuorinen 1983/III, 47-49).

Of the hierarchic models of personality, Erikson's theory is one of the few which encompass the whole process of life of a human being from birth till death. In this theory the life-span of an individual has been divided into eight stages. The teachers of the present study would fall within the sixth and seventh stages (intimacy vs. isolation and generativity vs. stagnation) of this classification (Erikson 1963, 263-269). Temporally these stages cover early adulthood and middle-age. After acquirement of personal identity, the most essential thing in life is the establishment of a stable, intimate, and mutually trustful sexual relationship without loss of one's ego-identity. Important also become the development of a social role of one's own, the formation of a family, the development of a professional career, the occupational possibilities for self-actualization as well as the experiences of valuation and communal integration provided by the latter. It is the success in family and working life which is important in the realization of the meaning of one's life and of one's self-imposed objectives. They are important factors of mental health, but they also constitute some of its criteria.

4. PERSONALITY AND ACTIVITY OF A TEACHER AND CHANGES THEREOF

4.1. Teacher personality as a concept and as an object of research

The question can be asked whether a separate 'teacher personality' exists. Are there not in the teaching profession quite differing individuals who can be described in the aforementioned terms depicting the dynamics and structure of personality? Teachers can by no means be fitted into a single mold of personality; instead, they must be regarded as individuals, and, indeed, recently the concept person has often been applied to them instead of personality. A teacher nevertheless has a definite function in society whereby she has an influencing effect on other people. The nature of the teaching profession brings to the front certain skills and aspects of personality which justity the concept 'teacher personality'.

In studies concerning the teacher personality, there have been four major approaches. It has been treated: as a social stimulus value evaluated by local inspectors, the school board, colleagues, pupils, and their parents; as a role or function described on the basis of observation of a teacher's behavior or measurement of the products of her activity, e.g., the pupils' educational achievement, physical, psychic, and social well-being or symptomatic behavior; thirdly, as a psychological entity which encompasses the conscious and non-conscious structures within the dynamic and hierarchic organization of motives, experiences, and actions of a teacher surveyed with projective techniques and self-evaluations; and fourthly, the activity of a teacher has been regarded as an interactional relation to the pupils and studied through interviews, observations, and filmings. (Dunkin & Biddle 1974, 38; Getzel & Jackson 1963, 506-508)

The 1960's were, according to Strømnes (1979, 13-32), devoted to surveys of the effiency and the various roles of teachers with the aim of prediction; other points of emphasis were the activity of teachers and their relationship to pupils in teaching situations. One of the main objectives was to find ways for directing the best students towards a career in teaching. There has been a shift in the emphasis of research during the last decade. Recent studies have been centered, more than earlier, on teacher education, on the personal and professional growth of the teacher: job satisfaction, social adjustment, and mental health. (Cf. even Eriksson 1975; Taylor 1980; Wagner 1980)

In his research on the role of the teacher in the modern pluralistic society, Eriksson (1975) suggests that the most essential objects of observation are the realisation of the individual values and objectives of the teacher, her relationship to her pupils, to her subject matter, to her colleagues, and to the society. The great variety of activities undertaken by the teacher demands well-developed consciousness of self and of the society, and openness, and ability to master the subject matter.

When examined in the terms of Coan's dimensional model, the above factors of the teacher personality can be localised in its dimensions of efficiency and relatedness. Only during the last few years has interest been taken in those aspects of the personality of teachers ascribable to the dimensions of inner harmony, transcendence, and creativity. Of the factors of mental health, the teacher studies do examine cognitive and social efficiency and adaptation from the angle of the society while less attention is paid to individual objectives and physical and spiritual factors.

Teacher research has become a field of its own, and its contacts, e.g., with the trends of research of dynamic psychology seem to have been rare up until the last few years.

The following section will contain a more detailed presentation of those aspects of teaching, of the role and personality of the teacher that are assumed important in the development of the mental health of the teacher and in her conception of mental health in general.

4.1.1. The principal factors of teaching and teaching ability

According to Gage (1963, 96), teaching consists of an interpersonal influence which is aimed at altering the behavior of another individual. This influence takes place mainly as a perceptual or cognitive process, i.e., through the ways the individual gets meaning out of the objects and events that his senses make him aware of. Essential in this process are the cognitive, the affective, the psychomotoric, and the social factors.

Eson (1964, 494-495) contends that teaching becomes more effective if the teacher is able to observe the teaching situation objectively, to understand herself, her work, and its social connections. According to Eson, teaching is a form of self-expression.

Ausubel (1968, 449-450) regards teaching primarily as a cognitive process and describes as its most essential factors: a mastery of the content of the subject matter and of the technique of teaching; a variety of ideas, flexibility, and state of differentiation of teaching; the communication between teacher and pupil. He classifies the central psychic processes of learning and teaching as functions of the ego. In their description of the action and behavior of the teacher, McNergney and Carrier (1981, 22-29) conceive these as presupposing personal growth of the teacher in addition to the mastery of certain skills required in teaching situations. The better developed the teacher is both professionally and as a human being, the more mental reserves she has for teaching.

Many studies have used the grade acquired in teaching ability as a measure of the competence of the teacher. The former is a rating of the professional ability of students, presented by a teacher training institution. The grade in teaching ability nevertheless contains some drawbacks. It is apparent already on the basis of the factors of teaching described above that teaching is a very comprehensive event where the teacher makes use of her entire personality: the various possibilities of expression. A process such as this is difficult to quantify with one figure, especially since this process may contain different elements in different persons. The quantification of the role of socio-emotional factors presents particular problems.

Because of this, the grade in teaching ability must be considered as the mastery of a situation limited'in time, place, and content:

the management of the prescribed teaching duties by the teacher candidate. The emphasis in the evaluation is on cognitive factors. As the grade in teaching ability is an average of the ratings of several evaluators, it has, with the above limitations, a general validity.

According to the study of Hytönen (1970, 111), the grade in teaching ability has significant correspondence to the conscientiousness, flexibility, and what is known as general teaching competence of the teacher candidate evaluated in the teaching situation; according to Koskenniemi and Alikoski (1967), the correspondence is to cognitive abilities, i.e., to the diploma of the teacher training institution.

Especially today, when the role of the teacher is in transition, the grade in teaching ability is unable to comprehensively predict the future professional success of a teacher.

It has been proposed recently (cf. pp. 16-18, 61, 65, 86) that teachers should try to avoid excessive authoritativeness, and function in the classroom rather as supervisors and disseminators of information and skills than as ones who pound lessons into the heads of pupils. This role of the teacher is seen as effecting vigorous and group-centered activity among pupils as well as task and problem-centered teaching. It presupposes a more personal and social style of teaching on the part of the teacher. Cognitive factors are not as essential in this as in the teacher-centered model. The adopted style of teaching always depends on the personality of the teacher, on the content of the subject matter, and also on the level of personality development of the pupils. The present grade in teaching ability is a poor measuring device in pupil-centered teaching, although it is difficult to indicate any other grade evaluation that would have the same level of reliability and exhaustiveness as a measure of teaching competence. In some studies it has been replaced, i.e., by self-reports of the teacher, by pupils' evaluations of the teacher, by the learning achievements of the pupils, and by estimations of the way the teacher deals with her pupils and with problems of discipline. Use of evaluations such as these is tedious because one-sided application of any of them always leads to erroneous conclusions. There are, however, apparent reasons for abandoning the excessive valuation of the grade in teaching ability and for adopting more varied evaluations. (Alikoski 1968; Cronbach 1977, 647-682; Dunkin & Biddle 1974, 31-51; Koskenniemi & Alikoski 1967; Kyöstiö 1975, 114-120; Peterson & Walberg 1979, 1-7; Viitaniemi 1978)

4.1.2. The professional role of the teacher and the objectives and attitudes in education

As mentioned above, teaching consists not only of the dissemination of particular skills and knowledge but also of the realization of certain societal roles based on contents of culture, i.e., its economical structure and generally accepted educational objectives. Education is always a social process. The principal task of the teacher is the conveyance of culture and also the providing of stimuli for its continuous renewal. A success in this task presupposes that the teacher herself has adopted the culture and internalized its values, adjusted to the environment without losing her creativity, her capacity for self-renewal and for the renewal of her environment, and that she accepts changes. In her capacity as a conveyor of culture, the teacher is inescapably driven into the role of the behavioral model; in some stale and isolated environments this may be experienced as unduly demanding, stress and anxiety provoking. A role conflict is born.

For the teacher to succeed in her task of conveyance and innovation, she is to understand herself and her own potential, the developmental capacity of her pupils, and other social stimuli offered by her cultural background. The system of education in itself offers a key to the social system of the community and it is thus to conform to the cultural requirements of the community. The educational system also includes the code of ethics of the community; the conveyance of this code is one of the important tasks in the role of the teacher.

The role of the teacher changes along with the structures of society. In modern society, more and more families have both parents employed outside the home and the number of one-parent families has increased. It follows that more and more often the teacher of today has to substitute for parents, act as a trusted friend, guide, and adviser for the pupils, and simultaneously be a representative of the culture of grown-ups.

In the school community, the teacher is not only a supervisor of work and learning but also a group leader. In this latter role, she can greatly influence the emotional atmosphere and the social relations of the class while at the same time providing the pupils with a model of the functioning of a working community. The type of leadership the teacher applies is influenced by the age and developmental level of the pupils as well as by the expectations of the social community. (Ausubel 1968, 450-451; Cronbach 1977, 647-674; Eson 1964, 494-520; Haavio 1954; McNergney & Carrier 1981, 29-45; Wagner 1980)
Based on his empirical studies, Kyöstiö (1968) presents six dimensions of the role expectations directed at the teacher. These dimensions have been derived with factor analysis from the role expectations expressed in attitude variables by members of school boards, teachers, teacher candidates, and pupils. These factors are as follows: 1) ethical customs (conservativeness - liberality), 2) social contact, 3) behavioral restrictions employed by the teacher (authoritativeness - democratism), 4) diligence - tenderness, 5) external manners, 6) social participation.

The conceptions of man and mental health held by teachers have been little surveyed. These are nevertheless observable in the expressed educational objectives and attitudes of teachers, which also reflect their conceptions of what is known as the ideal human being. An interesting empirical survey has been made by Brown (1974). In it he examines the correlations between the progressive or traditional ideologies of teaching, the belief systems, and the personal philosophical orientations held by teachers. The subjects of the study consisted of 70 teachers and teacher candidates working in science, English, and as classroom teachers in the elementary school. According to the results, a progressive educational attitude is in agreement with the ideas of existentialist philosophy whereas a traditional educational attitude is not. There are markedly more experimentalists among science teachers and students than among English teachers or teachers in the lower level. The educational attitudes of science teachers are more traditional then those of English teachers or of teachers in the lower level. The latter are the least traditional.

Brown believes that teachers of English adopt the ideas of existentialist philosophy in the course of their training. Their curricula do contain philosophical elements. In reality, the situation may be more complex. For instance, the manner of recruitment of English and science teachers obviously plays a part in the result. Because of the small size of the group studied by Brown, no great conclusions can be drawn from his results.

According to the study of educational objectives carried out by Sauvala and Kari (1981, 67-74), the educational objectives of pupils, teachers, and parents are quite congruent. This unanimity is greatest regarding the following ten aspects of personality or forms of behavior pursued: honesty, reliability, justness, valuation of peace, mutual confidence between parents and children, acceptance of responsibility for own actions, avoidance of narcotics, consciousness of one's responsibilities, learning of the things important in life, and responsibleness for the fulfilment of one's task. The religious and ethical objectives of education showed the most incongruence. Religious objectives of education are better accepted by the young and the old as well as by subjects in northern and eastern Finland. In the survey of Sauvala and Kari, the acceptance of educational objectives is affected by success at university, sex, educational level of parents, occupation, age, and geographical location and type of local government at the family's place of residence. (Sauvala & Kari 1981, 67-112)

The study of Sauvala and Kari is exploratory by nature and thus it remains superficial. As it is, it is not of much use in educational practice or in the research on the development of personality. Should one attempt to translate the everyday language used in it into the terminology of dynamic psychology, one could say that the goal of education is an individual whose ego and superego are well developed and free of defensive limitations, whose self-conception is positive and realistic, whose sense of reality is good, and who has an open and adaptive relation to her environment, who accepts her culture and adopts it. In other words, the objectives consist of those central factors of personality which in the preceding chapters have been described as essential manifestations of mental health.

The programs of education and teaching present educational objectives in the form of abstractions which the teachers then try to put in to practice according to their understanding and the direction given to them. Koskenniemi (1963) has studied the way in which the educational objectives operate in practice. He followed a group of young teachers during their first three years of teaching. The majority of the teachers (4/5) considered their educational objectives clear and conscious. According to the results, however, only a little over one third of the teachers were in reality aware of the influence their educational objectives had upon their teaching. The level of differentiation of the educational objectives and teaching ability do not correlate in this survey whereas the former does so with the long-term and independent realization of educational objectives.

Kansanen (1971; 1974) has analyzed the experiences of teacher trainees concerning the objectives expressed in the 1970 curriculum of the comprehensive school. He has also followed the changes that take place in the attitudes toward these objectives during teacher training. According to his results, the valuation of the objectives declines at the beginning of training but rises again markedly toward the end of training. The straightforwardness of the evaluations also decreases during training. The students thus seem to better understand the meaning of these objectives near the end of their training; at the same time, however, they comprehend the complexity of realizing these objectives. The group studied by Kansanen is rather small and represents only one institution of teacher training but even as such his results can have a directive effect.

The surveys of Koskenniemi, Kansanen, and Sauvala & Kari are of interest for this study as all three deal with the same period of time as this study. The manner of realization of these studies is, however, heterogenous to such an extent that no general conclusions can be drawn from their results regarding the changes in educational objectives or conceptions of man in our country during the 1960's and the 1970's. Apparently the principal objectives of education have remained much the same in practice in spite of the fact that educational experts and the policy-makers of society have more clearly than before emphasized, on one hand, the personality objectives and, on the other, the collective aims of education.

For this study, the most interesting surveys of attitudes of education and teaching are the ones that examine developments in the attitudes. Stern and Keislar (1977) have compiled an extensive review of the research on the attitudes of teachers and the changes in these. No surveys of attitudes toward mental health come up in their article. Though, the attitudes of teachers toward various deviant groups of children - the mentally and physically handicapped, children with behavioral problems, and children of ethnic minorities - have been studied.

In our country, the developments in educational attitudes have been surveyed, i.a., by Alikoski (1967). He measured the educational attitudes of 64 teachers with the MTAI (Minnesota Teacher Attitude Inventory). The results indicated that attitudes toward education become more positive during the theoretical stages of teacher training but that they gradually became negative with growing teaching experience during teacher training or in the course of working as a teacher after graduation. This result corresponds to those achieved by other researchers.

Asp, Lahdes, and Peltonen (1967; 1969) describe pedagogical expectations directed at pupils and at the teaching profession and environmental and individual circumstances as factors that affect teaching attitudes (1967, 52). They find that the greatest changes in teaching attitudes occur right after the end of teacher training. The attitudes do not, however, become uniform but seem rather to vary even more than earlier; this is true also for the differences between the attitudes of men and women. Women that have been the most successful in their studies seem to be the most disappointed when confronted with the reality of teaching.

Karvonen (1970/64; 1970/66) has investigated the effects of further training on the attitudes of teachers. His observations are based on the three-component theory of attitudes (cf. p. 51). Karvonen studies the effect of manipulating one of these components, the cognitive one, on the other two. According to him

(1970/66, 39-40), the attitudes of participants in training become generally more positive. As expected, the influence of cognitive information also induces positive changes in the other components of attitudes. The permanence of the attitudinal change was not investigated in this study.

4.1.3. The professionally successful teacher

The question of success in a teaching career can be approached from three angles: that of practical experience, that of the various theories of teaching, and that of empirical research.

In the 1940's and 1950's, there was still quite great unanimity in our country regarding the attributes of a good teacher. Haavio, among others, describes in his work Opettajapersoonallisuus (The Teacher Personality, 1954), which appeared as a first edition in 1948, moral sense, genuineness, consciousness of duty, pedagogical love, tact, and estheticism as the characteristics of the ideal teacher. Haavio's conception of a teacher is based on personal experience, speculative intuition, the educational ideology of 'Geisteswissenschaft', and the typology of Spranger.

Hollo's work on the teacher personality and the field of education Kasvatuksen maailma (The World of Education) came out in 1952. In it, Hollo places particular emphasis on the esthetic factors of teaching and the general learning indispensable to a teacher. Hollo's conception of a teacher is based on theoretical argumentation. The works of Haavio and Hollo both had great influence on teacher training in the 1950's and even thereafter.

McNergney and Carrier (1981, 52-71) have presented a review of the prevailing theoretical orientations in teaching. The origins of these orientations have been the following psychological, educational, and social theories concerning the processing of information, personality, social interaction and behavior. As classes of content of the treatment of subject matter, they propose on the cognitive level: knowledge, comprehension, application, analysis, synthesis, or evaluation; on the affective level: reception, responsion, valuation, organization, and value-based characterization; on the psychomotor level: mastery of the large movements and fine motor activity of the body, non-verbal communication, and speech behavior. According to them, teaching requires not only a mastery of the subject matter and other human skills but also a humane treatment of behavioral problems.

McNergney and Carrier (1981, 130-153) describe the following aspects of personality as affecting the individual occupational success of a teacher: intelligence, cognitive style, field independence, conceptual level, level of moral and ego development, affective factors, expectations, conflicts, and anxiety. The following will be a more detailed discussion of those of the above characteristics of a teacher deemed relevant in this study.

Intelligence is important in the adoption of the practical, empirical, and theoretical elements of teaching, i.e., general teaching competence, and also in the way the individual conceives himself and social and societal relations, and in the way he understands his pupils.

Cognitive style comprises the manner in which the individual gathers and processes information and solves problems. Individual cognitive style has great effect on behavior and it is very constant. It is usually bipolar, i.e., both its extremes may be equally valued. They contain both assets and restrictions.

Field independence is a measure of the independence of the decisions and solutions made by the individual, i.e., whether the internal factors of the individual have more influence than the external ones. The deductive thinking of those independent of the field is analytic and abstraction-oriented while the deductions of dependent individuals are comprehensive and socially oriented. Cognitive style and field independence seem to correspond to Coan's dimension of relatedness.

Conceptual level comprises the capacity of the individual for differentiation, discrimination, and integration as well as interpersonal maturity.

McNergney and Carrier consider the level of ego development a complex phenomenon. They see it as including personal as well as occupational activity, differentiated control of inner impulses, interpersonal style, conscious activity, and identity.

As affective factors they describe attitudes, expectations, and conflicts such as open and latent destructiveness, hostility, and anxiety. The conflicts and anxiety of a teacher are considered a restraint on efficient action and as a negative influence on the study atmosphere.

McNergney's and Carrier's conception of the attributes of an efficient teacher coincide with those discussed in Chapter 3. Their treatment, however, emphasizes the cognitive factors and the corresponding theories of personality. They present the different aspects of personality separately and do not attempt to create any dynamic theory of teaching.

Very rarely do the textbooks and scientific research of today to examine the personality and the effects of the actions of teachers comprehensively, as entities. Stress is usually placed on cognitive ability or on some individual affective factor, such as the effect of the attitudes or valuations of teachers on the actions of the pupils. Few attempts at syntheses of this separate information have been made. General agreement does exist though about the significance of certain aspects of the personality of teachers. These conceptions include, among others, the following: the basic attitude of a teacher toward her pupils is to be positive and express personal warmth and pedagogical love. To be able to support her pupils in the development of their personality and self-consciousness, a teacher has to know and accept herself and be able to face and manage her deepest feelings. Self-acceptance and authenticity lead to valuation of others and open communication. This is a prerequisite for the conferment to the pupils of the teacher's sympathy, her conception of the meaning of life, and of means for realistic and perceptive self-evaluations. The interactional relations of a mature teacher are authentic and understanding, vertical as well as horizontal; thus even the relation to colleagues is a constructive one. Anxiety, hostility, unpurposiveness, alienation, and withdrawal constitute obstacles to open communication and genuine human relations. (Ausubel 1968, 453-455; Eriksson 1975; 1978; Glatthorn 1975; Roe 1956, 228-231)

In Finland, empirical surveys of the personality of the professionally successful teacher have been attempted since the 1950's. Viitamäki (1959) has formulated a specific grade in teaching ability to measure the capability of the teacher. According to his results, this grade correlates closely with the general average of the high school leaving certificate, the sum total of points in the matriculation examination, the entrance examination of the teacher training institution, and with the following psychometrically tested aspects of personality: good intellectual capacity, verbal fluency, richness of ideas, good emotional control, mature ego and superego, easeness of affiliation, psychic plasticity, and sense of reality; i.e., the central aspects of personality described above.

Koskenniemi et al. (1965, 540-547) have published part of a longitudinal study in which teachers lives have been followed from three years after their graduation to the time of publication. Intelligence, but not too high an intelligence, has a positive correlation with the grade in teaching ability. Ability to think systematically and a positive attitude toward children and teaching are some of the significant factors in a teacher's success. Of the 63 teachers followed, Koskenniemi rated 8 % as failures in their career.

Renko (1972) has investigated the influence of the teacher upon the personality development of pupils. He considers the teacher, her personality, and her teaching technique, the latter two being interdependent, the primary effectors in a teaching situation. Renko measured the personality of the teacher through observation of teacher behavior during class, and the progress of the pupils through their performance in achievement tests.

According to the results obtained by Renko, the following technical factors of teaching are statistically near-significant in the school achievement of pupils in the lower stage of the comprehensive school: the teacher's general average on the leaving certificate from the teacher training institution, the grade in teaching ability, the grade in educational science, the amount of teaching, the presentational clarity and logicality of teaching, and the control of learning; as well as the following personality features of the teacher: objectivity, friendliness vs. harshness, attractiveness, systematicalness, optimism vs. pessimism, and comprehensiveness. The results obtained in the second and fourth grades were partly contrasting.

Renko's way of defining his terms is clear where the operationalization of concepts is concerned whereas his conception of personality - its development and effect - is very one-sided, as are the corresponding methods of measurement. Renko establishes his thinking based on that part of the theory of social learning which deals with modeling. Hence, what he is studying is almost exlusively cognitive learning.

It has been shown in many studies that the teacher confers to her pupils not only knowledge and skills but also other aspects of personality, i.a., various models of reaction and problem solution and conceptions concerning human existence and the meaning of life. Important correlations have been found between the personality of the teacher and the pupils' school achievement, social and cognitive development, and adoption of creative models of action (Baker 1979; England 1976; Lundgren 1978). Recently the interest of researchers has been focused on the effects of self-conception. Noad (1979a; 1979b), among others, has demonstrated the significant correlation (26 %) between the self-conception of the teacher trainee and her academic achievement; this correlation is even greater than the one between achievement and the educational attitudes adopted by the trainee (14 %). In regression analysis, these two provide an explanation for 40 % of the educational achievement. It can be assumed that the same cognitive processes are effective in the development of self-conception and in educational success. They both display the same objectives: the orientatedness and purposiveness of behavior. According to the results of LoVette (1974), a positive self-conception and behavior of the teacher correlates markedly with the self-image of the pupils. His subject group was quite large: 734 pupils in the lower stage of the comprehensive school and 31 teachers. The self-conception and behavior of the teachers was measured with the Tennessee Self-Concept Scale (TSCS) and the self-conception of the children with the Self-Esteem Inventory (SEI) of Coopersmith. The applied methods measure mostly cognitive conceptions of self.

The educational objectives of the society are uniform in the Soviet Union and in the DDR. In these countries, the conceptions of man, society, and the world are all based on Marxian-Leninist philosophy. The ultimate goal of education is creating the communist personality, and modern pedagogical and psychological methods are employed in the pursuit of this objective (cf. pp. 25-27). Because the conception of man, the value objectives, and the educational goals all run parallel in the Socialist countries, in contrast to the pluralism predominant in the West, the socialist conception of the teacher will be treated here as a section of its own.

The educational scientists of the Socialist countries have been especially interested in the influence of the personality of the teacher on the pupils, and they have attempted to analyze it both theoretically and empirically. Schröder (1979) has compiled an extensive review of the studies of teacher personality published in the DDR and the Soviet Union. These describe the pedagogical situation as a complex phenomenon with the personality of the teacher as just one of the many factors involved. Researchers have been especially interested in the role of the teacher as a behavioral model and as an object of identification. One of the significant elements in the development of the individual is the development of controlled action, the conversion from pedagogical, external control to individual self-control. The individual thus becomes active in his growth and responsible for his actions. Both the teacher and the pupils' collective are considered important in this sequence of events.

The development of a rich and harmonious socialistic personality can be examined on the basis of two assumptions: 1) Man is the primary source of energy in, and the effector of, societal progress. 2) Man is the creator and guard of ideology, the state, culture, and morals.

A teacher not only teaches skills and knowledge but also confers her norms to the pupils. She thus acts as a behavioral model. Both the conscious and the unconscious functions of the teacher are realized in this role. Scientists are specially keen on finding ways of controlling the latter functions and bringing them into systematical pedagogical use in the interaction of the teacher with her pupils. It is assumed that identification motivates pupils to adapt certain models of behavior. Therefore, many studies are devoted to elucidating the suitability of the teacher as an object of identification and the capacity of the pupils for this identification. Any adult is a potential object of identification but for a teacher it is inherent in his professional role; models of human existence and ideals are necessary for growing human beings. (Makarenko 1975; Schröder 1979, 23-41)

When the socialistic conception of a teacher is compared with the Western one presented above, many similarities as well as differences can be found. The significance of the teacher in the teaching situation and as an object of identification are conceived in a similar way by both; there is, however, a difference of emphasis because of the different educational objectives. The demands for the development of cognitive efficiency and individual potential are emphasized in Western culture while, in the Socialist countries, more importance is attached to the development of social consciousness and responsibility. In Western countries teaching is seen as an interpersonal process in which both pupils and the teacher participate, though these relations are described as important means of individual learning rather than as objectives in their own right.

Sauvala and Kari (1981, 4-43) have compared the Western (U.S.A., Sweden, and Finland) research and definitions of educational objectives and the corresponding Soviet ones. Our educational objectives seem to differ most from the ones of the United States and the Soviet Union, and they appear quite similar to the Swedish ones. In the United States, emphasis is placed on democratic ideals, integrity of the individual, and knowledge of the constitution of the country. With us these are not as significant although here too the rights and the freedom of choice of the individual are more in the fore than in the Soviet Union. In the latter the central aspects consist of the ideals of communism, reverence of the history of the revolution and the tradition of work, and - especially in education - of the development of political consciousness. In their comparison, Sauvala and Kari also find similarities in educational objectives. The following aspects of personality constitute some of these objectives: honesty, brotherhood, mutual respect, reliability, helpfulness, and collective responsibility; all of the educational objectives studied also present the harmonious and socially responsible development of the total personality of the individual as an ultimate goal.

Studies conducted in the Socialist countries on the teacher personality are not greatly different from those made in the West. In accordance with adopted ideology, social consciousness and its teaching are emphasized. Empirical studies have been devoted, i.a., to the elucidation of the effect of the teacher's style of leading and teaching, status, attitudes, behavioral variables, and intrapsychic determinants on the development of pupils' collectives, the school discipline, the motivation of learning, and the independence and responsibleness of pupils. Individual studies have come up with significant correlations. The aforementioned factors are nevertheless considered interdependent. It is this type of survey and differentiation that has been pursued in the following study by Schröder.

Schröder's aim is to develop a multidimensional, theoretically and methodologically valid empirical frame for the research of the rehearsal and effects of the aspects of the teacher personality. The data of his study consist of aspects of personality and pedagogical behavior as self-reports by teachers and as evaluations by colleagues and pupils. The variables are thus mainly cognitive. The survey comprises several phases and it is difficult to get a picture of the total number of subjects and the representativeness of sampling. The statistical methods employed include factor analysis, cluster analysis, regression analysis, and discriminatory analysis (Schröder 1979, 25-28, 54, 83, 91-93).

According to Schröder's results, the following three aspects of the personality of the successful teacher are the most essential:

1) an action-oriented and normative picture of self,
2) a sympathetic and supportive attitude toward pupils,
3) a pedagogical purposiveness and endurance.

Other measured aspects of personality like normative picture of the ideal, difference between picture of self and picture of the ideal self, introversion, neurosis, attitudes toward teaching, and stress did not prove significant; some of them seemed to have no correlation at all with professional success.

The most important features of pedagogical behavior were shown to be:

1) understanding,
2) emotional warmth,
3) goal-motivation,
4) control,
5) consistence.

Traits significant in the creation of a favorable social learning situation were:

1) sense of humor,
2) encouragement,
3) patience,
4) motivation in a spirit togetherness.

The behavior and the aspects of personality of the teacher can be described through three factors: social-emotional leadership, political-ideological education, and pedagogical behavior. (Ibid., 131-132, 212-225)

In Schröder's work, the emphasis is on the explanation of the normal behavior of the teacher but some inferences can also be made about symptomatic behavior. The results show, for example, that psychically disturbed teachers are useless as objects of identification. Schröder's endeavor is respectworthy in its attempt at a multidimensional and extensive survey of the effects of the teacher's personality. It offers a structured perspective of the area under study. The results are interesting if not very divergent from the ones obtained in Western studies, with the exception of those factors directly dependent on ideological differences. The results are ambiguous and in part contrasting. This seems to indicate that human behavior forms very diverse relational systems even when the ideological objectives are uniform. One of the limitations of the work is its exclusive employment of cognitive methods of research. Shröder's presentation is detailed and conscientious which makes the development and choice of methods easy to follow. The methodology of the study parallels the ones employed in the West.

Since it is evident that a teacher greatly influences the personality development and self-conception of a child, it is not insignificant what conception of man, mental health, and health the teacher has adopted and what the state of her own mental health is. Consequently, the following chapters will be devoted to an examination of the evaluation of the mental health, social adaptability, job satisfaction, and personal growth of teachers.

4.2. The mental health, job satisfaction, and personal growth of teachers

4.2.1. The mental health and job satisfaction of the teachers

There have been both specialists' evaluations and teachers' self-reports of the mental health of teachers. Their reliability and comparability is difficult to assess. Are the criteria of mental health applied by various evaluators even tolerably similar? Are they not always bound by culture, i.a., its standard of knowledge? Thus it may be that the results obtained in different periods and in different cultures are not comparable because of, e.g., differences in the conceptions of man the standard of knowledge, or the demands set on the teacher. (Cf. Chapter 2)

Sorenson (1954, 189-207) and Blair, Jones, and Simpson (1954, 613-650) published estimates that 4-5 % of American teachers were seriously disturbed and that 10-20 % had personal difficulties requiring psychiatric aid. Sorenson estimated that 37.5 % of teachers had psychic problems manifested as troubled sleep, physical and psychical disturbances, and low efficiency on the job. He described introvert, quiet, withdrawing, excessively ambitious, stubborn, anxious, quarrelsome, hyperactive, neurotic, and selfish teachers as risk types. According to him, these teachers manifested experiences of stress and conflict as physical, psychosomatic, and psychic illnesses and disturbances. Sorenson emphasizes the body-mind unity of man and, consequently, sees the disturbances as naturally occurring in different spheres of man's activity.

The above evaluations date back to the 1950's. Several of the more recent works show, however, that the problems of mental health of teachers have by no means been solved, rather to the contrary (Moe 1979; Sparks 1979; Stapelton 1979). On the basis of statistical evidence, Miller and Wiltse (1979) demonstrated an increase in problems of mental health among teachers in the United States. Even their cautious estimate arrived at a figure of 9 % as the proportion of teachers classified as having serious psychic disturbances. One out of three (33 %) teachers manifested moderate emotional disturbances and 78 % experienced distinct symptoms of stress.

Brodbelt (in Miller & Wiltse 1979) describes the following features of behavior in psychically disturbed teachers: unfairness, inflexibility, overreaction, sarcasm, intimidation and neglect of pupils, unreasonable punishment, unfriendliness, lack of sympathy, dictatorial action, irritability, and incrimination of pupils.

Haslund and Lunn (1967) surveyed the morbidity of Danish teachers in the Copenhagen area. Teachers were found to be underrepresented among the patients of psychiatric hospitals. They had the same occurrence of serious psychic disturbances as the population in general whereas the incidence of neurotic and psychopathic disturbances was significantly below the population average.

In Finland, Mäkinen has conducted an extensive research project on the occupational circumstances, health, and well-being of comprehensive school and senior high school teachers (1974; 1980, 142-144). The results published in 19[illegible] form a part of the inter-Nordic NORDSTRESS research project on teachers. The data of the study were collected with questionnaires from 2,618 teachers, which constituted a representative sample of Finnish teachers. Only those results will be presented here which have relevance to health, psychic well-being, and job satisfaction and which have some implications in common with each other. They will be discussed in detail in connection with the empirical part of the present study.

According to Mäkinen, 5 % of the teachers were seriously disappointed in their career and 23 % were disappointed to some extent. About 3 % had entertained concrete plans for a change of occupation. A majority of the teachers were thus satisfied in their job. 30 % of the teachers described themselves as being so depressed and stressed by professional worries after the working day that it hampered their participation, e.g., in leisure time interests. A majority of the teachers, 50-70 %, regarded the future of their professional branch with pessimism; they foresaw an increasing work load and a decline in monetary compensation, in employment, and in occupational freedom. 57-91 % of the teachers experienced insufficient support, e.g., from the auxiliary staff or the pupil welfare personnel of the school, the parents of pupils, the school administration, the teacher organizations, and the public opinion.

The teachers had a lot of leisure time activities. And their health was good when compared with results from the population at large. 74 % of the teachers considered their state of health good. Also their rate of absence from work because of illness was lower than that of the population in general. The most common symptoms of psychic and psychosomatic stress in the teachers were tiredness (reported by 35 %), depression, insomnia, restlessness, and indisposition (9-15 %). Pain in the back and in the neck and headache (7-19 %) were the most frequent of the somatic symptoms. 15-17 % reported allergic signs, high blood pressure, and inflammations of the vocal cords during the past year. The occurrence of high blood pressure, migraine, obesity, and allergy was more common in teachers than in the population in general. Only 5 % of the teachers reported psychic disorders. Sexual differences showed nosignificance in this study.

Teachers of the lower stage of comprehensive schools and of senior high schools were more satisfied with their working conditions than teachers of the upper stage of comprehensive schools. Anxiety, stress, and isolation were more frequently experienced by teachers of the upper stages and of senior high schools than by those of the lower stages. The well-being and health of the teacher correlated most strongly with the material conditions of her work and her physical working environment, the human relations at work, the degree of disturbing behavior by the pupils, and also with the economic structure or the level of industrial development of the school locality. Other factors associated with the living neighborhood in which the teacher lived were deemed insignificant.

Women and older teachers expressed more psychic and physical disturbances than men or young teachers. (Mäkinen 1980/144, I-XII, 139-143)

It is apparent from the survey by Mäkinen as well as from the other studies presented above that the mental health of teachers is good compared with the population average. The most typical reactions of teachers seem to be the various somatic and psychosomatic stress symptoms rather than actual mental disturbances. There is reason for a critical stand on the health evaluations presented above. Several of them are based on self-reports by teachers, and these may not always be fully sincere.

The aforementioned results are explorative by nature and they contain no attempt to link the data with a theoretical structure of mental health. They are examinations of the physical, psychical, and social well-being or disturbances of teachers with little reference to spiritual conflicts. This is the case also in the work of Mäkinen who endeavors no testing of theoretical hypotheses or construction of a theory of mental health; his work is rather a source of practical information.

Explanation of the job satisfaction of teachers has been attempted, i.a., on the basis of drive theories. Williams (1978) has analyzed the empirical data of Georgiovanni and Carver in terms of Maslow's drive theory. He arrives at the conclusion that teachers are well satisfied in their basic material needs and security, i.e., the two lowest levels of Maslow's hierarchy, but that the highest levels - the needs for social contact, valuation, and self-actualization - are neglected. As a trainer of educators, Williams is especially interested in the satisfaction of these higher-level needs.

In her study of the job satisfaction of young teachers, Louhimo (1969) approaches her subject from the view of the theory of satisfaction of Homans. She describes the satisfaction of teachers with five factors: success in choice of career, personal satisfaction, status satisfaction, general satisfaction as a teacher, and satisfaction with pupils. On the whole, the teachers studied by Louhimo can be considered as satisfied with their job.

The problem of the job satisfaction and professional exhaustion of teachers has also been approached from the view of role theory. Conflicts and a helplessness in solving them have been seen as special occupational problems. The ideals and expectations concerning one's own role as a teacher have not always corresponded with the facts of everyday life. The work load has been experienced as the most stressful factor. The role of the teacher is in constant transition depending on individual needs and life situations. Role conflicts appear least controlled in newly graduated teachers. (Gehrhe 1979; Locke & Messengale 1978; Schwartz et al. 1980; Strømnes 1979; Walberg 1978)

Women appear to be more satisfied in the teaching profession than men (McNergney & Carrier 1981, 122).

These surveys have raised the question as to what extent the elements of an actual role conflict derive from the earlier development of the personality of the teacher. Special attention has been paid on the one hand to the general mastery of adaptative mechanisms, i.e., coping behavior, by the teacher and, on the other, to his control of job dissatisfaction, alienation, isolation, and psychasthenia. The methods of analysis applied have consisted of various inventories but usually of no projective techniques.

Koskenniemi (1963; 1965; 1969; 1982) has examined the social adjustment of teachers from the view of mobility, both horizontal and vertical. He has followed the same group of 65 teachers for 22 years (cf. p. 72). The teachers studied by Koskenniemi have graduated from a seminar based on the lower secondary school course, and this small amount of prior education has set certain limits on mobility, especially on change of career and professional advancement.

During eleven years of observation, only one of the teachers followed by Koskenniemi changed his career. Usually it is in the beginning of a teaching career that changes of occupation are most frequent. Most teachers started their career in rural areas though many women and those with good teaching ability later moved into urban centers. The direction of movement has usually been from the north to the south. This phenomenon coincides with the general tendency of movement of the period, i.e., from the countryside into large centers of population and from the north to the south. The teachers studied had an average of three changes of locality. The most common grounds for moving were emergency - the temporary nature of the situation, its discontinuation, or the location of the job of the spouse - and factors of job satisfaction associated with locality, school community, and human relations. Those with the best and those with the poorest achievement in teacher training were the most mobile. 70 % of the men and 73 % of the women had participated in postgraduate training. After eleven years of teaching, 30 % had acquired situations requiring a higher level of competence than their original positions. These higher situations included positions in "civic schools" and special schools.

Koskenniemi has distinguished four groups of teachers on the basis of their mobility. He does not in any way belittle the influence of external factors, e.g., changes in the conditions of living, but rather finds explanation in such elements of personality as environmental adaptability, interest in children, as well as in the voluntariness of the choice of the teaching career. Koskenniemi describes the stable and the mobile teacher in terms of adaptibility and voluntariness of the choice of the teaching career. The survey of Koskenniemi is unique in its class and psychologically most interesting. It does not elucidate, though, what effect the continual state of his teachers as objects of research has had on their adaptability and job satisfaction. They are likely to have given more thought to their job satisfaction and the factors that influence it than the average teacher. Thus they may also have acquired means for adjustment. These factors may play a part in explanation of the rather high rate of professional attachment found in the group of teachers surveyed by Koskenniemi.

4.2.2. The personal growth of teachers

There are various expectations concerning the professional progress of a teacher. Some expect him to continuously improve his mastery of the subject matter and teaching techniques, others again expect a child and problem-centered, flexible, and individual style of teaching effecting personal growth and socialization of the pupils.

The school has to adjust itself to the social, political, economical, and technological changes of the society. Today's demands for the democratization of working life require that the rules of democratic activity are learnt while still at school. Experiences gathered recently of systematized models of teaching have not been very reassuring. It follows that expectations are today directed more and more at the personal and self-reliant professional development of teachers. Information on this personal development and its influence upon pupils is, however, very scanty. (Taylor 1980; Wagner 1980)

The surveys made have examined the career span of teachers from the view of social organization rather than from the point of personal growth of teachers, and there is no abundance of the former type of studies, either. The study of Koskenniemi on social adaptation and mobility has already been presented above. Griffiths, Goldman, and McFarland (1965) described the career span of teachers in New York City from the view of social mobility. They bring forward four types of teachers: 1) The pupil-centered teacher who likes working with children, is satisfied with her job, and tries to avoid administrative tasks. 2) The subject-centered, intelligence-oriented teacher who seeks a teaching environment best suited for herself. 3) The benefit-centered teacher who seeks positions that provide possibilities for extra income. 4) The leader-teacher who pursues administrative positions. This type of teacher is not as interested in money as in the ability to use power.

Becker (1951-1952), for his part, examined the career span and horizontal mobility of Chicago teachers. Despite the formal and economical similarity of the teacher situations in different schools, the teachers rank the schools, and the rank of a school influences future changes of situation. These differences between schools appear 1) in the capacity and willingness of children to learn, 2) in the discipline of the school, and 3) in the level of moral development prevailing in the school. Children in slum areas are difficult to teach because of their uncontrollableness and violence but also because they have a poor capacity and little willingness to learn. Upper class children do learn fast enough but they are somehow "spoilt". Their behavior is difficult to control and their sense of morals is poorly developed. Middle class children are conscientious, ambitious, and perhaps not such quick learners but they are reliable and morally mature. In addition to the behavior of children, the job satisfaction and career span of teachers are influenced by the amount of cooperation with the pupil's parents, with the head of the school, and with colleagues.

Wiseman and Start (1965) studied 248 teachers in various positions five years after their graduation. Their data consisted of biographical information and of evaluations by the head of the school. They came up with eight factors, four of which described different groups of teachers. These four factors included opinions of the head about the teacher, achievement of the teacher in teacher training and post-graduate studies, and the satisfaction of the teacher with his job. The evaluations of the school heads emphasised the cognitive abilities of the teachers. There was no marked correlation between these evaluations, the achievement of the teacher in teacher training and post-graduate studies, or the job satisfaction of the teacher.

Cortis (1979) followed a group of teachers for twelve years after their graduation. Some results of his study have been published earlier (1968; 1973; 1975). His data consisted of results of psychological tests presented to the teachers in their final year of teacher training, biographical information, academic achievement ratings, estimations of job satisfaction, evaluations by the head, the number of teaching positions held, and the size of the class. There is a marked correlation between teaching ability, job satisfaction, general cognitive ability, and unconventional personality (measured with Cattell's 16 PF). The latter Cortis interprets as denoting a certain independence. Teaching ability appears to be a progressively developing skill. The grades issued by the teacher training institution, including that in teaching ability, carry some predictive value, which nevertheless diminishes with time.

The results of Wiseman & Start, or those of Cortis, cannot be uncritically accepted. There has been quite a marked diminution in both of these test groups over the years the effect of which has not been completely determined. These types of follow-up studies always contain many sources of error almost impossible to control. Though even as they are, they still elucidate some of the relevant trends of development. The above surveys manage to describe the professional development of the teacher while paying little attention to her personal growth.

4.3. The teaching career: recruitment of students and individual selection criteria

Neither the Elementary School Act of 1957 nor the Act on Teacher Education of 1971 define the attributes of a good teacher or the criteria for recruitment into the teaching career. There have nevertheless been some general views concerning the teacher and the objectives of education and of teacher training in committee reports and memoranda of the 1970's. The Report of the 1973 Commission on Teacher Training (1975, 39-49) and a memorandum known as KATU (Kasvatusalan tutkinnonuudistuksen ohjaus- ja seurantaprojektin muistio Luokanopettajan koulutusohjelman yleisestä rakenteesta, A Memorandum of the Management and Follow-up Project of the Degree Reform in Education on the General Structure of Classteacher Training Programs, 1977, 4) state that the teacher is expected to have an effect on the entire personality of the pupils; equally on their cognitive, socio-emotional, and psychomotor development and on their view of the world. The following roles of the teacher are described: the role of distributor of knowledge, supervisor of activity, foreman, model, and the role of a democratic participant in the work. The role of educator is specially emphasized.

Teacher training is thus expected to provide the students with both cognitive and attitudinal abilities so that they adopt a realistic attitude of educational optimism consistent with the contemporary level of scientific knowledge, become conscious of their position and influence in society, and acquire a readiness for continual study and self-improvement. Teacher training should not, however, encourage the stereotype of the ideal teacher. The variation among pupils, in itself, requires a variety of teachers. This variety is also considered an enrichment and a developmental stimulus in the school community (ibid., 49).

The Report on Teacher Training (ibid., 46) anticipates that the future emphasis in teaching will be on the planning and supervision of independent activity in the class and in various smaller teaching groups, the provision of stimuli, and the enhancement of the entire personality of the pupil. The objectives of teacher training may thus be divided into four categories: the society-oriented, the pupil-oriented, and the discipline-oriented objectives, and the objectives directed at controlling the teaching process (ibid., 48-56).

In 1974, a memorandum on mental health education in schools was prepared on the initiative of the National Board of Education. Although this memorandum does see the personality of the teacher as essential in mental health education, it provides no directives as to what characteristics should be considered important in the teacher personality or how the teacher is to take care of his own mental health.

As early as the 1950's the selection of students into classteacher studies had its present two-stage arrangement. In the first stage, the criteria consist of the cognitive abilities of the applicants: the sum total of points in the compulsory subjects of the matriculation examination and the general average of the high school leaving certificate, relevant experience in teaching and occupational life, other interests, as well as excellent grades or other certificates in non-academic subjects. The second stage formally (in 1958, i.a.) consisted of a performance test and an interview with the principal; today it comprises a teaching episode and an interview or a structuring episode and discussion.

Despite the annual *statutory (Decree No. 373/1971; No. 503/1973)* directives of the Ministry of Education on selection, surveys have shown that the units of teacher education have emphasised different criteria in selection which has rendered a heterogenous recruitment students (Jussila 1970; 1974). In the late 1970's, steps were taken to make the recruitment more uniform, i.a., by employing a uniform national selection at the first stage. According to surveys by Jussila (1970, 25) and Alikoski (1980; 1981), the performance test and the teaching episode have carried most weight in selection.

Of the annual enrollment in teacher training today, 1/3 are men and 2/3 are women; in the 1950's the sexes were evenly represented. Of the applicants for classteacher studies in 1977-1979, 20 % of the men and 10 % of the women were accepted.

No serious attention has been paid to the mental health of the applicants for teacher training but assumably those with more serious psychic disturbances are eliminated on the basis of their health certificates or their behavior in the interview, in the performance test, or in the teaching episode.

The recruitment of students into the teaching career has also been examined through investigation of the motives of teacher trainees or of applicants for teacher training. Only such Finnish surveys will be presented here that are deemed relevant to the present study.

Karvonen (1970/67, 22-25) has surveyed the motives of graduate teacher trainees in their choice of career and come up with three dimensions in factor analysis: calling-orientedness, prestige-orientedness, and instrumental orientedness.

Jussila (1976) has studied applicants for teacher training in the aforementioned second stage of the selection process. His subjects comprise 837 applicants to the various Finnish-language teacher training colleges of our country. His methods consist of a motive inventory based on Herzberg's job satisfaction theory and, in addition, of several tests for cognitive self-conception and of demographic variables as explainers of motives. Jussila (1976, 71) describes the motives of applicants with the following dimensions:

1) factor for calling and professional orientedness,
2) factor for ambition,
3) factor for influence,
4) factor for livelihood,
5) factor for the necessity of teaching experience,
6) factor for the influence of idols,
7) factor for the substitutional solution.

The order of the factors is almost identical for men and women. The result is in agreement with the findings of Karvonen and some corresponding foreign surveys.

According to Jussila (1976, 119, 121), the socio-economic or other demographic variables as well as talent and former school achievement explain extremely little about recruitment into the teaching career. Calling-orientedness, more clearly than the other motives is anchored in the personality of the individual: self-conception, personal needs, and social background. Emphasis on these motives is typical in individuals with long-range plans for their teaching career. Women are over-represented in this group. Application for teacher training is the typical substitutional solution of young men who have failed in their endeavors to enter some other career and who have had a model, e.g., a schoolmate, studying at a teacher training institution. The greatest part of the recruitment into teacher training seems based on individual motives', social factors seem not to be essential.

4.4. Sexual differences in teacher research

It has become apparent from the above that more women than men are recruited into teacher training (cf. p. 88). Earlier studies have also shown that women are more satisfied than men as teachers (cf. 82). The question can be asked whether the women recruited into teacher training have different motives than men or whether the above differences are a result of sex-related differences of personality. The survey by Jussila presented above indicates that the applicants' motives as such do not differ according to sex.

In his survey (1974, 36) of students (170 men and 191 women) conducted in 1967, Coan presented a number of distinctions between the male and the female personality. His findings are in agreement with those of other studies of the same kind. According to Coan (1974, 173-178), the overall mode of orientation of men is more objective, pessimistic, analytic, and practical than that of women. Women tend to be more flexible, more personal and more positive in their attitudes, more esthetic, more interested in arts and people, and thus in themselves as well. Women are more extrovert, emotionally participative and open than men. Men are more interested in the physical world and in natural science, and mathematical ability is more typical in men than in women who again are better developed verbally. Men have a greater need for self-control and they are more active than women. Women are more conservative than men where customs and culture are concerned. Their lack of independence and their interest in themselves may be partly responsible for the lower self-esteem of women as compared to that of men. Women suffer more anxiety, neurosis, and psychosomatic symptoms than men, or at least they express them more often than men. Apparently women fare better than men in the area of self-expression.

Wiersma and Nussel (1972) examined the sex-related differences in academic achievement and certain factors of personality of 447 English lower stage teacher trainees. According to their results, women master composition, literature, child development, and tools better than men; women also have a deeper sense of responsibility. Men, on the other hand, are more stable emotionally than women and they have a more positive opinion of administrative personnel. No great differences exist in the mastery of natural science and mathematics or in the attitude toward the teaching profession.

In his aforementioned study, Jussila also examined the differences between men and women. According to his results (1976, 69), women have a better school achievement and a better matriculation certificate and they are significantly younger than men at the time of application for teacher training. This is explainable by the time men spend in the military service and as substitute teachers prior to application. Men, are socially more active than women. The socio-economic background of men and women is the same. In the results of women, dominance, endurance, and nurturance associated with calling-orientedness are the prominent features. The results of men display deference, aggression, exhibition, and achievement. The latter aspects of personality were measured with the activity index of Stern and the Personal Preference Schedule of Edwards (Jussila 1976, 120).

The surveys of the personality of the teacher presented in the preceeding chapters and the abilities required by teaching seem to indicate that women generally possess more of the relevant characteristics; as a consequence, women are recruited into the profession more frequently than men and are more satisfied in it than men. As surveys of teachers have not been able to come up with the same magnitude of differences between the sexes as ordinarily found between men and women, it is apparent that the potential recruits are familiar with the aforementioned character requirements and that this affects their readiness for application. It can be concluded on the basis of the results presented that the differences between men and women are relative rather than absolute.

Chapter 4 has been devoted to a review of the literature on the role and the principal functions of teachers and the objectives of education, i.e., the conception of man in education and the changes therein. The essential factors in teaching were found to be the general competence of the teacher, especially her verbal ability and mastery of social relations but also the entire ability of the teacher for personal expression.

The role of the teacher requires mature personal, social, and societal consciousness: an acceptance of reality and a recognition of one's own potential, emotional stability, social activity - especially a positive interest in children - and a purposive way of life. The essential factors of mental health and professional success include job satisfaction, social adaptability, mature functions of the ego - some of these are identity and independence, mental flexibility, and creativity, or an ability to solve problems without flight reactions - and openness of personal, social, societal, and nature experiences.

Depression, exhaustion, lack of concentration, and various somatic and psychosomatic symptoms were described as the typical stress symptoms of teachers. Teachers that are in risk consist of anxious, aggressive, introvert, withdrawing, and defensive, i.e., primarily of neurotic individuals.

Recent emphasis, in the objectives of education, has been on democracy, mental and material well-being, activity, justness, cooperation, societal consciousness, internationality, and also the unique personal integrity of the individual.

In research, former educational achievements have been a satisfactory measure of cognitive ability. In addition to factors of personality, age, post-graduate training, level of industrialization of the school locality, size of school or class, and the developmental stage of the pupils have been shown to affect the job satisfaction and mental health of teachers.

When teacher studies are described in terms of Coan's dimensional model, the factors of the dimension of efficience and relatedness seem to be emphasized; some attention is given to creativity and inner balance but almost none to the factors of the dimension of transcendence. The spiritual goals or values of teachers have not been studied much recently, only their religiousness has been treated.

The above review indicates that the activity, personality, and mental health of the teacher cannot be observed on the basis of any narrow or one-sided theory of personality but that one has to attempt to create a synthesis of the relevant factors of different theories. The empirical section of the present study will be devoted to the examination of the above-mentioned factors.

5. PROBLEMS AND HYPOTHESES

5.1. The conditions for the realization of the survey

The ideal of science of humanistic psychology, which constitutes the principal theoretical and methodological frames of reference of the present study, presuppose flexibility and a meaningful employment of research methods, e.g., of the statistical techniques (Lindholm 1979; Niinistö 1981, 5-8). Though empirical methods are by no means be littled, they are considered in the main instrumental in value, and greater significance is attached to the interpretations and estimations of the researcher according to the hermeneutical model. Thus rigid theory-derived hypotheses will not be presented although certain predictions are made.

The survey compares two groups of teachers, the older (middle-aged) and the younger (advanced teacher trainees). Background information of both these groups has been acquired on two different occasions. The purpose of the survey is to find out if any such differences or changes exist in mental health and the attitudes toward mental health between these groups of teachers that may be explained by changes in the objectives of education and teacher training.

The examination of the differences and changes in the results of the two groups leads to a quasi-experimental research scheme described, i.a., by Campbell and Stanley (1963) and Cook and Campbell (1979). A research scheme such as this does not allow direct control of all the influencing factors. Quite a number of these factors have been listed by Campbell and Stanley (1963, 175-176). The ones most relevant for this survey are the historical factors and the influence of maturation, testing, the means of research, selective dropping-out, and the personal surveying of the subjects, the effects of which are not necessarily parallel in all the individuals and groups studied.

The work edited by Cook and Campbell (1979) presents methods of analysis that aid in the pinpointing of the effects of the abovementioned sources of error. In this survey these error-factors will be estimated separately for each result.

5.2. The principal problems and hypotheses of the survey

Problem 1 Reflection of cultural changes as differences in the mental health, the perceptions of health, and the perceptions of mental health of the teachers

Discussion will be limited to the treatment of differences in teachers perceptions of health and mental health and in those aspects of personality that have been presented above as some of the objectives of school reform.

It was mentioned in the historical synopsis that the biological perception of man was the prevalent one in Finland up to the 1970's (cf. pp. 13-17). During the 1960's and the 1970's (cf. pp. 17-18), however, it was gradually replaced by a more psychological and social approach and recently the primariness of the spirituality of man has again gained marked support (cf. pp. 27-29). One could thus think that the older teachers have adopted a more biological view of man than the younger ones. However, Brown's survey (cf. pp. 65-66) shows that the philosophical orientation of the younger lower stage teachers is more empiristic than that of the older ones; the latter tend to be more humanistic. This situation can be explained by noting the effect of a longer period of teaching which, along with life experiences, has a tendency to shift the philosophical orientation in a more humanistic direction.

In his analysis, Peltonen (1979) arrived at the contention that, especially during the 1960's and the 1970's, the originally Christian and humanistic conception of man of the school reformers was transformed into a more materialistic and societal one in the course of the planning and enforcement of the comprehensive school (cf. pp. 17-18).

Partly as a result of the contradictoriness of the foregoing theoretical considerations and empirical results of research, but also because of the available methods, no exact, testable hypotheses can be presented. The treatment of the empirical findings, on the other hand, offers the possibility of elucidating whether such differences exist in the perceptions of health and mental health of the two groups of teachers that can be traced to different perceptions of man (religiousness and humanism vs. materialism and societalness).

The conception of man adopted in the course of the school reform emphasizes more than the earlier one the democratism, sociality, independence, creativeness, internationalism, and mental health of the individual as objectives of the development of personality (cf. pp. 17, 86). The above aspects of personality are very comprehensive abstractions, which are not concrete enough for one to measure them, in an empirical study, without disputes. Only some aspects or elements can be measured with psychological tests. Therefore no particular hypotheses are presented in this survey. In connection with an investigation of the differences in test results between the teacher groups, the correspondence of these differences to the previously described societal pressures for change will be elucidated.

The above aspects of personality presented for testing also constitute factors of mental health. It is, however, the intention also to survey manifestations of mental disturbance such as weakness of ego, of self, and of self-esteem, anxiety, hostility, aggressiveness, and defenses (cf. p. 91).

One of the proposed aims of the comprehensive school is the protection of the mental health of the pupils; this aim bears relevance for teacher training as well. It is also a known fact that periods of transition like the ones we have experienced in the last few decades increase the occurrence of mental disturbances. It follows that no justified hypothesis can be presented about differences of mental health between the two groups.

Problem 2 The teachers' mental health, their perceptions of mental health, and the changes in the latter: association with education and some demographic variables

In this survey, the attitudes toward mental health and the associated etiological explanations are used as measures of the perception of mental health. An individual is believed to adopt his attitudes toward mental health in the same way as any other attitudes and they are considered to have corresponding functions in the energetics of personality.

Personality and its dimensions, as understood in this study, were defined as a dynamic entity (cf. 39-40). Thus the function of an individual attitude cannot be predicted detached from the whole. Its function can be different in different associations, e.g., in the different age and occupation groups, as has been shown by earlier studies of educational and mental health attitudes (cf. pp. 52-53, 68). These studies have employed mainly cognitive methods of measurement in the quantification of personality variables. Here the measurement will be with both cognitive and projective methods on the different levels of consciousness. This adds to the tediousness of predicting the functions of the observed attitudes. Especially so since no corresponding earlier studies have been available for comparison. No hypotheses can thus be made as to the functions of individual attitudes in the energetics of personality. Only descriptive examination of the manifestations of attitudes will be performed in the emprical survey.

It has been demonstrated in earlier teacher surveys, i.e., in that of Karvonen (cf. pp. 68-69), that the attitudes of teachers can be influenced by manipulating the cognitive component of attitudes, e.g., by post-graduate training. The recent emphasis (cf. pp. 17-18, 86) on the democratization of education and on psychological understanding leads one to assume that recent teacher training and voluntary postgraduate education at the university have affected the participants towards this. Two hypotheses are presented.

Hypothesis A: Training is associated with a lessening effect on the authoritarianism of teachers.

Hypothesis B: Training is associated with a positive effect on the psychological understanding of teachers.

The significance of attitudes has been treated above from the view of individual energetics and the control of the dynamic equilibrium of personality, though also communal factors have been indicated. According to the model of communal solidarity presented by Allardt (1971, 65-70; cf. p. 53), the traditional village community on the countryside is governed by mechanical solidarity and pressures for uniformity, both of which influence attitudes. The model has been tested and shown functional by Hujala (cf. p. 53) in connection with a survey of the differences between the urban and rural population in their attitudes toward mental health. The attitudes toward mental health were shown to be more authoritarian and moralizing on the countryside than in the cities.

According to the results obtained by Kari and Sauvala (cf. p. 66), religiousness is more pronounced in rural areas than in industrialized communities.

The assumed influence of these factors upon the attitudes of teachers toward mental health forms the basis of the following hypothesis.

Hypothesis C: The attitudes toward mental health held by teachers of rural village schools are more religious and moralistic than those of other teachers.

Problem 3 Association of etiological explanations of health and the changes in these, with mental health, education, and demographic variables

Because of the status of the body-mind problem as the fundamental element in conceptions of man, and thus also in conceptions of health, it was discussed at length in the theoretical section, Chapter 2 (cf. pp. 18-33). The treatment arrived at the conclusion that none of the proposed solutions are acceptable as such: not the primariness of the spirit nor the primariness of matter nor the equivalence of the two. The problem is deemed unsolvable on the basis of contemporary knowledge; each adopted view is ultimately dependent on one's beliefs and cognitive attitudes. This survey aims at empirical elucidation of the body-mind solutions of teachers and the correlations of these with the way teachers explain the etiology of physical and psychical disturbances. The question is examined in the terminology of the attribution theory (cf. p. 52). It is assumed that the solutions adopted by teachers correspond to their mode of structuring and classifying the events and objects of their environment.

Hypothesis A: The models of explaining the etiology of health adopted by teachers correspond to their mode of structuring and classifying their perceptual field.

According to Coan (cf. pp. 89-90), women possess a more comprehensive mode of orientation whereas the orientation of men is more materialistic, analytic, and realistic. A following amendment to hypothesis A is based on this consideration: A biological model of explaining the etiology of health is associated with an analytic mode of thinking and a good sense of reality.

Problem 4 Presentation of a dimensional model of the mental health of teachers and the location therein of the perceptions of mental health and their etiological explanations

In the theoretical section, mental health was defined as a process (cf. p. 12) and described with the dimensional model of the optimal personality (cf. pp. 55-58). The optimal personality presented by Coan is a synthesis of empirical research and philosophical and historical analyses. Thus no empirical model exists which could be subjected to testing as such. The selection of variables for the survey will permit testing of the model. The empirical studies by Coan mostly comprise cognitive methods of measurement. This being the case, Coan may not distinguish between the self and the ego as clearly as has been done here in the theoretical chapters (cf. pp. 40-43) and by Moreno for instance (cf. p. 32). Moreno defined roles as concrete and functional expressions of the ego and as precursors of self. Separate dimensions for the functions of the ego and the cognitive self were also obtained in a mental health survey of frontier guards (Nieminen 1980a, 76, 81).

Although attitudes have been considered as belonging to the dimensional model of personality, their location has remained obscure for lack of earlier studies. In all events, they are assumed not to belong to the most essential elements of personality but to be related to consciousness and action (cf. pp. 53-54).

In this study, an empirical multidimensional description of Coan's model of the optimal personality is attempted allowing for observation within it of the manifestations of the different levels of personality: the functions of the ego, the cognitive self-conception and the attitudes.

Problem 5 Manifestations of consciousness and awareness in the dimensions of mental health

Human consiousness and awareness emerge as two central factors in teaching, mental health, and the development of a conception of mental health (cf. p. 91). The theoretical section aimed at a synthesis of the conceptions of consciousness propounded by the various theories of personality. In it the following expressions of consciousness were described: the intrapsychic consciousness of psychoanalysis which corresponds to Coan's inner harmony, the self-consciousness of phenomenology, the societal consciousness of Marxian psychology, and the consciousness of experience (awareness) of Asian philosophy and humanistic psychology (cf. pp. 45-47). The expressions of consciousness were also illustrated through an examination of the obstacles to consciousness: the defenses, anxiety, hostility, and aggression (cf. pp. 48-50). The expression of forms of consciousness in the various dimensions will receive attention with the description of the dimensional model of personality; this, however, does not warrant any straightforward hypotheses.

In this survey, the most essential differences between cognitive self and the functions of the ego have been considered as constituted by the different manifestations of consciousness in both (cf. pp. 40-45). The cognitive self is here assumed to be associated in particular with the conception of reality and social relations. This is in keeping with the theories presented in phenomenology and social psychology.

Hypothesis A: Self-consciousness is associated with the social relations and the sense of reality of the individual.

Problem 6 Presentation of the developmental trends of the dimensions of personality and mental health

Factor analysis is predicted to reveal basic dimensions of which the developmental trends can be surveyed in association with subject life history during the time of the study. No exact hypotheses are presented.

Table 1. The regressors and regressands and the dimensions of the personality model of the survey

Regressors	Regressands	Dimensions of personality
Subject variables (personal): - cognitive abilities and skills (measured over 20 years ago) - other measured personality variables (measured over 20 years ago) - examinations taken Subject variables (social and other): - changes in life - family relations - local circumstances - school community	- acquired knowledge and adopted attitudes - self-conception - job satisfaction - mode of perception - level of integration - mode of experiencing - openness of experiencing - speed of response - productivity - creativeness, adaptive regression - ego-identity - social relations - sense of reality - defenses: repression, regression, intellectualization, projection - anxiety - aggressiveness and hostility - narcissism - mental health - physical health	efficiency creativeness inner harmony relatedness self-conception transcendence

III EMPIRICAL SECTION

6. SUBJECTS

The subject material comprises two groups of teachers of which group A forms the subject group proper. Group A represents employees in the field of education who were middle-aged in 1980. Because the majority of these still work as teachers, the group is henceforth spoken of as 'the middle-aged teachers'. Group B is a comparison group consisting of advanced teacher trainees. It will henceforth be known as the 'the advanced teacher trainees'. Below follows a detailed description of the two groups.

6.1. Group A: the middle-aged, i.e., older, teachers

The population of group A comprises 93 comprehensive school teachers (47 men and 46 women) who commenced teacher studies at the Helsinki Teachers' College in 1958 and graduated in 1960.

The entire population underwent psychological testing during the academic year 1958-1959 (group A2). At that time, the age of the group averaged 21 years and 10 months, with the men on the average being nearly one year older than the women. In 1980, a re-testing covered 83 (group A1) of the original subjects which amounted to 92 % of the living members of the population. Two subjects refused testing, one was prevented from attending by illness, and four were debarred by excessively long traveling distances. The latter four resided abroad at the time. Three subjects were deceased.

76 out of the 83 interviewed subjects (84 % of the surviving population) completed the re-testing in its entirety. Seven subjects were excluded from re-testing: three of them had already been employed for a long time outside the school institution and were thus considered as lacking the necessary contact with the work of the teacher and the school, three had received a degree in psychology and one was finishing her studies in the same field, hence their participation in psychological tests was not judged as rational. The career of the psychologist can of course be considered one of the ways of advancement for a teacher.

The assembled data indicated that 84 (or 93 %) of the living members of the population still worked in teaching or other school-associated occupations. These teachers are thus not very mobile occupationally, albeit somewhat more so than a corresponding group of teachers surveyed by Koskenniemi (cf. pp. 82-83). The higher level of basic education of the present group has provided more potential for mobility.

Even those interviewed subjects who had changed their occupation had a positive view of their teacher training. Only one doubted whether he would ever in his life benefit from this training. The basically positive outlook of the subjects provides an explanation for their good attendance at the re-evaluation. The 37 men and 39 women who completed the re-evaluation had an average age of 43 years and 10 months at the time of re-testing. This average age is slightly higher than that in the survey of Mäkinen (1980/142, 24; cf. pp. 79-80) where the representative sample of teachers averaged 40 years.

The following table provides information on the occupational structure of group A1.

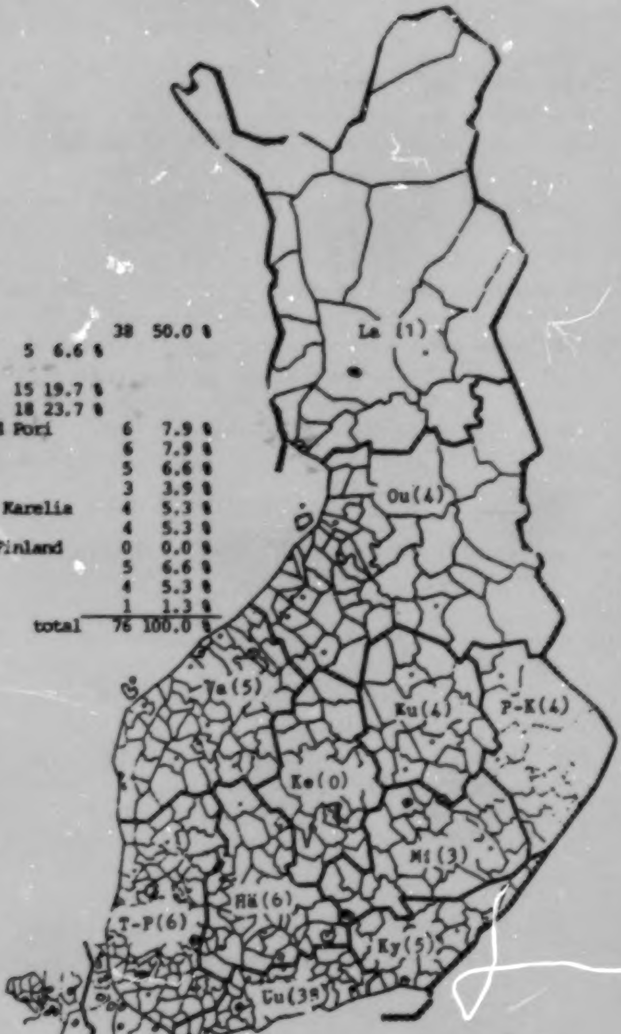
Table 2. The middle-aged teachers according to official position in 1980

Class teachers in the lower stage of the comprehensive school	58	76 %
Teachers in the upper stage of the comprehensive school or subject teachers in senior high school	8	10 %
Special education teachers	6	8 %
Guidance counselors	2	3 %
Administrative officials	2	3 %
total	76	100 %

The proportion of teachers who remained teaching in the lower stage is slightly higher here than in a comparable sample studied by Koskenniemi (cf. pp. 82-83), i.e., 76 and 70 %, respectively.

Table 3. Teachers of group A according to location of employment

County of Uusimaa ;			38	50.0 %
- Helsinki	5	6.6 %		
- Espoo, Vantaa, Kauniainen	15	19.7 %		
- rest of Uusimaa	18	23.7 %		
County of Turku and Pori			6	7.9 %
County of Häme			6	7.9 %
County of Kymi			5	6.6 %
County of Mikkeli			3	3.9 %
County of Northern Karelia			4	5.3 %
County of Kuopio			4	5.3 %
County of Central Finland			0	0.0 %
County of Vaasa			5	6.6 %
County of Oulu			4	5.3 %
County of Lapland			1	1.3 %
total			76	100.0 %



38, or 50 %, of the subjects in group A, were employed in the county of Uusimaa. The rest of the group was divided throughout the country as shown in the table on page 103. Of the group, 49 % (37 subjects) were employed in industrialized communities and 51 % (39 subjects) in the sparsely populated areas of the countryside.

The group that completed re-testing well represented the original population. On the average, the test results (from 1958-1959) and academic achievements (from 1960) of the non-attendants did not deviate from those of the population. The results of the re-evaluated group can thus be considered representative of the population in general. The population constitutes a fairly representative sample of the students at the Helsinki Teachers' College in the 1950's and the 1960's. I.e., the grades achieved by group A are on the same level as those of classes in the years immediately before and after. Also, the class of 1960 was considered very normal in their social relations and in their attitudes toward training and toward the teaching career, according to the evaluations of the teachers at the Helsinki Teachers' College (personal communication with professor Ruutu, the principal of the Teachers' College, 1960).

6.2. Group B: the advanced teacher trainees, i.e., the younger teachers

Group B consisted of lower stage teacher candidates who started their studies in the Department of Teacher Education at the University of Helsinki (until 1973 the Helsinki Teachers' College) in 1977 and were scheduled to graduate in the spring of 1980. Of this population of 95 students, 87 (92 %, 59 women and 28 men) were tested during the academic year 1977-1978 (group B1). The follow-up testing in the spring of 1980 covered 59 students (group B2) (62 % and 68 % of the population and the initially tested group, respectively).

The age in group B, when first tested, averaged 21 years and 9 months which was almost equal to the corresponding figure for group A. In group B, however, the women were 5 months older than the men, on the average.

The group that attended re-testing can be considered a representative sample of its population also in the case of group B, although the attendance at the re-testing was not altogether satisfactory. The contacting of the teacher trainees proved very laborious. Overall, the attitude of group B toward the survey was more negative, mistructful, and unwilling than that of group A.

6.3. Representativeness of the data

Although both group A and group B are good samples of their respective populations, it remains open to question whether their results carry any wider applicability. A completed senior high school course and a passed matriculation examination have always been requirements of entry to the Helsinki Teachers' College. Contrariwise, large numbers of teachers with lower basic education graduated from certain other corresponding teacher training institutions in Finland as late as the 1960's. The students of the Helsinki Teachers' College (from 1973 the Department of Teacher Education at the University of Helsinki) come mainly from the neighboring regions, i.e., southern Finland. These facts are enough to render the subject groups unrepresentative of the entire teaching personnel of the comprehensive schools.

According to the survey by Jussila (1976, 50-69; cf. pp. 88-89), the applicants at the teacher training institutions in Helsinki and Turku had better qualifications than applicants at the other teacher training institutions requiring a passed matriculation examination for entry; the former were also more active socially and their social background was better.

Group B, who started their studies in 1977, participated in a national inter-university joint selection when they applied for training. This selection was based on an evaluation of school achievement, work experience, and extra-curricular activities. The group can thus hardly deviate in these respects from the students at the other teacher training institutions of our country. The ultimate criteria of selection were, however, the evaluations by the various teacher training institutions concerning the pedagogical educability and aptitude of the applicants. Apparently the different institutions emphasize different factors in these evaluations despite the directives issued, as demostrated by the studies presented earlier (cf. pp. 86-89; *Opetusministeriön ohjeet ja suositukset vuodelle 1977*, Directives and Recommendations of the Ministry of Education for the Year 1977, Nr. 11771/24/76). Thus even group B is unrepresentative of all the comprehensive school teachers who graduated in 1980. The results obtained in this survey are thus applicable only to the teacher training institution in Helsinki.

As pointed out earlier, the selection of groups A and B or teacher training has not been entirely uniform. The matriculation examination has been more accentuated in the case of group A than in the selection of group B. For the latter more emphasis was placed by the evaluators on their performance in the teaching episode and the joint interview than for group A where the corresponding elements of selection were a performance test and an interview by the principal. Many surveys have concluded that the latter components of selection are more effective discriminators between teachers than the former. (Cf. Viitamäki 1959, 12; *Opetusministeriön ohjeet ja suositukset vuodelle 1977*, Directives and Recommendations of the Ministry of Education for the Year 1977, Nr. 11771/24/76)

7. METHODS

7.1.1 Evaluation of attitudes toward mental health and of associated etiological explanations

Chapters 3 (pp. 50-53) and 4 (pp. 64-69) reviewed the various theories concerning the structure of attitudes and their significance in personality; some research on educational and mental health attitudes was also presented. The said review presented attitudes as multimorphic (cognition, affect, action) and multilevel (cf. manifestations of attitudes on the different levels of consciousness) phenomena. It was also demonstrated that the conscious attitudes and the activity of the individual do not always parallel each other (cf. even Cook-Sellitz 1964; Scott 1957; Wicker 1969). Despite the above, it is the cognitive manifestations of attitudes measurable with questionnaires that constitute the principal objects of observation in the present study. This decision has been partly forced by economic considerations. The survey of a teacher group of the present size would have been far too laborious if other methods of research had been used; furthermore, the attitudes of teachers form here are only one part of the phenomena measured. As the objective of the study is the examination of the entire teacher personality, even projective techniques will be applied to complete the picture created by the measured attitudes.

7.1.2. Development of a mental health attitude and etiological explanation inventory for the survey

In the planning stages of the research project on preventive mental care mentioned above (cf. pp. 52-53), comparisons were made between the various mental health attitude inventories in wide use. OMI, the mental health attitude inventory developed by Cohen and Struening (1962), and Durkin's (1964) inventory of the explanations of the etiology of mental health proved the best documented and the most functional. Both inventories are elaborations of older attitudinal inventories published in the U.S.A. Some of the items are the same in both inventories. Their reliability and validity was evalued in the 1979 research project (Nieminen 1979, 132-190). The subject group consisted of 283 (193 + 90) university students in the initial stage of their studies in psychology or in certain subjects of the Faculty of Social Sciences. Their age averaged 23 years. The methods of analysis included, i.a., factor analysis. The per factor determined reliabilities varied between .82 and .20 in the OMI and in the inventory of Durkin. The obtained factorial structures deviated slightly from the original ones thus reflecting cultural differences. Both methods proved valid in content when validity was defined in terms of significant differences between the results of different subject groups as correspondence to the results of other personality inventories.

The mental health attitude and etiological explanation inventory of the present survey is an adaptation of the OMI and of the inventory of Durkin. It is a combination of those items whose frequency and reliability proved sufficient (factor analytical communality above .30) in the above-mentioned studies. Also, a few new items have been included in the total of 63 items of the inventory (cf. Appendix 3).

In order to make the data more compact and the essential information readily discernible, a factor analysis with the principal axis model and the varimax rotation was applied to the entire questionnaire material. Four clearly demonstrable factors emerged in the interpretation of the results. The eigenvalues obtained would have justified a solution with six factors (each with an eigenvalue exceeding 1) but as the explanative power of the three least significant factors was below 5 % of the total variance they would not have been of essential importance as explainers in the survey. A four-factor solution was deemed the most rational in view of the objectives of the survey. There was a marked decrease in eigenvalue between the fourth and the fifth factor which gave further justification to the solution adopted despite the low percentage of explained variance (below 5 %) of the last factor. Its inclusion was also supported by the subsequent analysis of its content.

The total percentage of explained variance of the four factors was as low as 27 %, and their total communality amounted to 71.3 % of the total estimated communality (calculated from the sum of the estimated communalities). The variances of the individual items were rather poorly explained in this analysis. The corresponding figures of a six-factor solution would have been 32 % and 83 %, respectively, which would have meant no essential enhancement of explanation.

Further processing of the results made use of sum variables corresponding to the above factors. An employment of the factorial points as such did not seem justified as the factor analytical solution was not quite unambiguous and statistically satisfactory.

7.1.3. The sum variables of mental health attitudes and etiological explanations formed on the basis of the factor analytical solution

Appendices 3-7 present the items, the item averages, the item deviations, the item correlations, the unrotated matrix, the eigenvalues, and the four-factor solution of the mental health attitude inventory. Table 4 is a factorwise presentation of the items with the highest positive loadings from which the sum variables were formed. The table also includes the communalities of the items and the percentage of total variance explained by each factor.

Table 4

Factors of mental health attitudes and the associated etiological explanations: factors, numbers of the sum variables based on the factors, items, loadings, and communalities

Factor I (3000)			II (3002)			III (3001)			IV (3003)		
Variable	Loading	h^2	Variable	Loading	h^2	Variable	Loading	h^2	Variable	Loading	h^2
2	.61	.39	8	.45	.26	6	.48	.38	6	.31	.38
4	.54	.34	19	.51	.30	16	.42	.21	9	.34	.14
11	.51	.32	21	.60	.40	17	.46	.27	29	.43	.30
15	.59	.42	22	.49	.25	23	.59	.37	30	.30	.43
46	.56	.32	26	.41	.26	24	.64	.43	47	.46	.31
52	.63	.46	37	.56	.46	25	.61	.46	60	.37	.35
53	.65	.47	40	.42	.32	27	.39	.20			
55	.60	.44	43	.45	.28	32	.47	.24			
56	.58	.36	45	.51	.44	33	.62	.42			
57	.60	.44	50	.40	.35	38	.53	.33			

Percentage of total variance explained by each factor:

I	II	III	IV
9.2 %	7.[illegible] %	7.0 %	3.2 %

Percentage of total variance explained: 27 %

As most of the high loadings turned out to be positive, it was deemed justified economically and interpretationally to include in the sum variables only variables with a positive loading.

The first factor of the analytical solution was named the dimension of religious and moralistic etiological explanation. It displays highest loadings in items that were placed within a factor of authoritarianism and moralism in the analyses of Cohen and Struening and in the 1979 research project (Nieminen 1979, 133-137, 159-160; 189). It could thus have been named the factor of authoritarianism even here, but since the religious and moralistic attitudes were more prominent in the present survey than in the earlier ones the name adopted seemed more justified. The sum variable (nr. 3000) of religious and moralistic etiological explanation was composed of 10 items with the highest loadings of this factor. The Cronbach alpha of the sum variable was .83 for the total subject group and .80 for group A.

The second factor loaded items that earlier studies placed within a factor of social restriction and authoritarianism. Here it was named the dimension of social restriction. The alpha of the corresponding sum variable (nr. 3002; 10 items) was .78 for the total subject group and .74 for group A.

The third factor consisted almost exclusively of items derived from Durkin's inventory. In the results of the 1979 research project, these items formed the first factor (1979, 189). The items loaded with this factor explain the etiology of mental disturbances in terms of intra and interpsychic, and socio-economic factors. It was thus named the dimension of psychological and social etiologial explanation. The alpha of the corresponding sum variable (nr. 3001; 10 items) was .79 for the total subject group and .74 for group A.

The fourth factor had no straightforward correspondence to any factor described previously. The items loaded with this factor consisted of positive and understanding attitudes toward psychic disturbances. It was thus called the dimension of psychological understanding. The alpha of the corresponding sum variable (nr. 3003; 6 items) was .81 for the total subject group and .85 for group A.

Both the present survey and the 1979 research project revealed fewer factors than corresponding American studies. There are two possible explanations: Either Finns display more uniform attitudes toward mental health than Americans do or Finns employ more stringent criteria in their factor analytical solutions. Both explanations seem plausible.

There was a statistically very significant correlation between the sum variables 3000 and 3002, on one hand, and 3001 and 3003, on the other (cf. Table 5). This situation is normal. It is very difficult to develop a personality inventory where there would not exist correlations between items that measure different aspects of personality. The correlation coefficients obtained here stayed on a reasonable level indicating that each of the sum variables also measured distinct attitudinal dimensions of its own.

Table 5. Intercorrelation of mental health attitudes and etiological explanations (N = 163)

Variable	3000	3001	3002	3003	3004	3005
3001	.12					
3002	.36***	-.20				
3003	.12	.36***	-.08			
3004	.01	-.01	.04	.12		
3005	-.06	.14	-.04	.04	-.58***	
3006	-.04	-.08	-.04	-.09	.12	-.63***

Level of significance (two-tailed test):

* p<.05

** p<.02

*** p<.01

7.1.4. Measurement of explanations of the etiology of health and the psychological, psycho-biological, and biological factors associated therewith

The aforementioned modified attitude inventory measures primarily psychic, social, and spiritual etiological explanations. As the present survey is based on a definition of man as a physical, psychical, social, and spiritual entity and as the body-mind problem was discussed at length in the theoretical section (cf. Chapter 2.2.2.), it was deemed of interest to survey the different models of solution of this problem among the teachers under study.

A list was drawn up consisting of 19 human disorders that are generally considered psychic, psycho-biological, or biological in origin (cf. Appendix 8). The name etiological explanations of health is hereafter applied to these constructions. The teachers were asked to choose, from among the disorders, those that they considered to be 1) solely (2p) or frequently (1p) of psychic origin, 2) of both psychic and biological origin (1p), 3) solely (2p) or frequently (1p) of biological origin. As no body-mind solution was adopted as such in the theoretical discussion (cf. pp. 25, 31-34) and as it was demonstrated that the current level of knowledge does not allow for conclusions on whether spirit or materia should be considered primary or if a view of equivalence should be accepted, it would have been inappropriate here to classify the obtained responses as right or wrong in the manner of cognitive tests. The answers were believed to reflect the cognitive component of attitudes, and subsequent processing of the results made use of the scoring of the answers.

Three separate sum variables were formed concerning the etiological explanations of health: one corresponding to the psychological (nr. 3004), one corresponding to the psycho-biological (nr. 3005), and one corresponding to the biological explanations (nr. 3006). As was to be expected from their composition, these sum variables correlated very significantly with one another (cf. p. 111 Table 5).

The sum variables presented in this chapter, on the basis of earlier surveys and the factors of mental health presented in the theoretical section, can be considered as measuring relevant mental health attitudes and explanations of the etiology of mental health and health in general. The reliability of the first four (3000-3003) was confirmed by analysis. Evaluation of the reliability of the last three (3004-3006) will take place further on.

7.2. Evaluation of the experienced mental health

7.2.1. The self-evaluative measurement of mental health: the MMPI and the FAM

One of the proposed aims of the present survey (cf. pp. 2, 95) is the evaluation of the experienced mental health of the teacher - an elucidation of her cognitive self-conception or a measurement of her attitude toward herself from the perspective of mental health - and its relation to other aspects of teacher personality.

Several cognitive instruments of self-conception measurement were employed in the research project of 1979. None of them turned out to be superior in validity; each one provided accentuation of somewhat separate aspects of personality. One of the methods tried in the project was FAM, Fashingsbauer's (1973) shortened version of the MMPI (Minnesota Multiphasic Personality Inventory).

Although the MMPI was originally developed for the needs of classical psychiatric diagnosis, from the 1960's onwards, in particular, it has found use in what is known as community psychology, i.e., in communal mental health care and education; it has also been applied in several career surveys of teachers (Dahlström et al. 1975, 3-5, 75-87; Getzels & Jackson 1963, 534-545). As the orientation of psychiatric activity is moving more and more towards prevention, rehabilitation and psychotherapy, new demands have been set for diagnosis. Besides the classical scales, many new scales have been developed from the MMPI to meet these demands (Graham 1977, 1-62, 79-148).

Scales can be derived from the FAM that correspond to those of the MMPI, rendering the vast amount of results obtained with the MMPI available for result interpretation. As the items of the FAM cover exactly those mental phenomena, experiences of psychosomatic disturbance, and problems of social interaction, that are relevant to this survey (cf. pp. 91-92), and as the functionality of the FAM required further testing on normal Finnish material, it was chosen as one of the methods of the study.

7.2.2. Fashingbauer's FAM

The FAM consists of 166 items derived from the MMPI. Fashingbauer selected these items on the basis of cluster analysis. The principle was to pick items that would represent adequately at the same time the classical scales of the MMPI and the method in its entirety. And thus the total correlation of the FAM and the MMPI is of the order of +.85. With different scales, different methods of measurement, and different subject groups, the correlation coefficients vary between .24 and .96. In general, the correlation coefficients are higher with psychiatric patients than with the normal population. In the FAM the medians of the re-test reliability values vary between .76 and .88 depending on the interval of testing. (Fashingbauer 1974)

Fashingbauer has also compared his shortened version of the MMPI with other corresponding inventories. He considers the FAM one of the best (Fashingbauer 1976). He and his colleagues have also surveyed its empirical validity by checking FAM results against evaluations by psychotherapists. The obtained correlation values proved the FAM sufficiently valid. (Fashingbauer et al. 1978)

Although many researchers are critical and cautious as regards the shortened versions of the MMPI, the great need felt in practical work for a facile inventory has prompted researchers to survey the validity of, i.a., the FAM, against the MMPI and other criteria of validity like certain inventories and interview-based evaluations by psychologists and psychiatrists. Several comparative assessments of this kind have been performed both with psychiatric patients and with the normal population. It can be said in summary that although the correspondence of the FAM to the MMPI is not absolute, it is adequate for clinical practice. Also, the other criteria mentioned above show that the FAM is sufficiently valid. The FAM has been found to be one of the best abbreviated versions of the MMPI in comparisons with the method of origin and other criteria of validity. (Butcher et al. 1980; Edinger et al. 1976; Freeman et al. 1977; Hoffman et al. 1975; Newmark et al. 1976; Newmark et al. 1978; Poythress et al. 1978; Thompson 1979)

It can be asked if it has been worthwhile going to all this trouble of developing the FAM. It is a well-known fact that its diagnostic ideas are based on somewhat outdated conceptions of mental health and psychopathology (cf. pp. 5-13). It is also a fact, however, that classical diagnosis is still fundamental in psychiatric practice despite the amendments made to the classification of diagnoses. In the last few decades, the general conception of the etiology of mental disturbance has changed and become more diversified along with changes in the nature and occurrence of the disturbances. This development, however, has not necessarily affected the models of description of psychic disturbances, e.g., the scales of the MMPI, as they are not meant to constitute etiological surveys. When the scales are applied as continua for the description of different types of disturbances, they can also be used in surveys of human predicaments lesser than pathological.

When the classical scales of the MMPI are supplemented with new scales derived from it for each separate purpose, the method will have lasting practical value. No radical changes of diagnosis are in sight that would invalidate its continued use.

7.2.3. Examination of the functionality of the FAM

The FAM results obtained in the above-mentioned 1979 research project showed that American norms are not applicable as such to the interpretation of Finnish results. Some of the subjects of the survey also felt that some items were strange or out of date (Nieminen 1979, 199-204). For these reasons normal data were gathered from 572 men and 506 women in 1977-1979, for the standardization and detailed analysis of the FAM. The sampled men were conscripts in military service and the women students of introductory courses at universities, summer universities, or institutions of adult education. The educational level of the subjects varied from completed compulsory education to academic degrees. With the men, the average level of education was completed junior high school and, with the women, completed senior high school. The men averaged 20.2 years (s=2.0) and the women 23.5 years (s=6.0). There is no decisive difference between this normal material and the surveyed teacher trainees (cf. pp. 101-105) in the above demographic variables except for the lower educational level of the normal material.

The FAM responses in the normal material were carefully analyzed. One of the aims was to acquire Finnish norms for the method and another to produce scales of best possible functionality, i.e., for the present survey. At this time, only such analyses made of the FAM will be presented that have affected the choice of variables of this survey. The other results will be published elsewhere.

In statistical multivariate analysis, primary variables are the most easy to control both from the view of mathematics and interpretation. Hence, separate raw scales were employed instead of profile scores. In other words, no K corrections or T conversions were made to the classical scales. As raw MMPI scores have been employed in many previous surveys, there is ample data concerning their functionality and validity. The K correction, for instance, has been shown to have no essential significance in statistical analysis. In multivariate analysis, corrections of this type can even obscure results and complicate interpretation. (Jarnecke et al. 1977; Kelley et al. 1978; Kunce 1976; Rathus 1978)

The composing of the best-functioning FAM scales was one of the problems of the present study. It is a known fact that the classical MMPI scales intercorrelate and at least in part measure identical aspects of personality. The scales have not been developed in view of statistical factor philosophy; they have instead been created to measure phenomena that deviate from normal behavior and experience in roughly the same way. For instance, an above-average anxiety-proneness is common in many psychopathological states. A diagnosis made on the basis of MMPI responses is not performed according to absolute scores of the scales, but according to the scale profiles. (Butcher & Tellegen 1978; Dahlström 1969; Levitt 1978)

In this study it is economically most rational to examine those scales which, without intercorrelating, still measure essential factors of mental health. Factor analysis has been one of the methods applied in scale composition.

The MMPI and its shortened versions have been subjected to factor analysis many times before, both with normal and patient material. The results have usually consisted of 2-4 basic factors of mental health. The content of these factors varies slightly depending on the surveyed subjects. Many studies have come up with general maladjustment and inhibition vs. control as the two basic factors (Dahlström et. al. 1975, 122-123). Bottenberg et al. (1977) obtained the following three factors: the factor of self-confidence and self-actualization, the factor of social confidence and cooperativeness, and the factor of physical, psychical, and social well-being. Bottenberg et al. considered their factors correspondent to the factors concerning neuroses and extraversion obtained by Eysenck (with the MPI).

Rathus (1978), too, comes up with three factors: the factor of psychosis and acting-out, the factor of neurosis and depression, and the factor of defensiveness. Even he considers his factors equivalent to Eysenck's factors of psychosis, neurosis, and extraversion. A factor of religiousness has been presented as an essential dimension in some studies. The percentage of explained variance ranges from 65 % to 72 % in the above factor analyses. The factor analyses performed of the MMPI and its abbreviated versions show that their scales measure basic continua of experienced mental health with normalness and deviance as relative concepts. The diagnosis of an individual depends on his position in these basic dimensions. This turn justifies the employment of profile scores on the level of the individual. (Bottenberg et al. 1977; Jarnecke et al. 1977; Rathus 1978; Wiggins 1969)

Factor analysis was also performed on the primary responses of normal Finnish FAM data (mentioned above p. 115) separately for men and women, but the obtained percentage of explained variance was exceedingly low. A three-factor solution only explained 17 % and 15 % of the total variance with women and men, respectively. Not even ten-factor solutions were able to explain more than 36 % and 28 % of the variance, and these solutions already included several factors with percentages of explained variance below 5 %.

Men and women displayed different factorial structures. Although the three factors described by Bottenberg could be discerned in the ten-factor solutions, the proportion of variance explained by them remained too low for the formation of sum variables.

The factor of religiousness obtained was the same for men and women. The sum variable of religiousness (nr. 3007 REL) of the present survey was formed on this basis. The other results of the factor analysis were not deemed useful in the teacher survey. Instead, it was decided that an analysis be made of the functionality of the classical and some newer scales of the MMPI with normal Finnish subject material.

The responses of the normal subjects were grouped into 29 scales of documented validity. Thirteen of these were classical and sixteen newer ones. The classical scales were composed according to the tables of Fashingbauer. The items of the other scales were selected from the work by Blaser and Gehring (1972).

The reliability and intercorrelation of these scales were examined. On the basis of this examination, a selection was made of those scales which showed sufficiently high reliability, low intercorrelation, and represented the basic dimensions of mental health revealed in the above factor analyses; in addition such scales were selected which measured factors of self shown essential in earlier teacher studies (cf. pp. 91-92). The coefficients of reliability obtained were all, as a rule, lower than corresponding values published in earlier research. This is understandable as far as the non-classical scales are concerned, as the items of the FAM mainly represent the classical scales of the MMPI.

On the basis of an item analysis of the selected scales, those items were accepted into the final inventory which showed correlation of above .30 with the total scale. Highly reliable, internally consistent measuring devices were pursued.

The items of the FAM and the intercorrelations and Cronbach alphas of the scales of the normal material accepted into the teacher survey as well as the final scales are presented in Appendices 9-11.

7.2.4. The variables of the FAM in the present survey

According to the above rationale, the following classical scales were selected: L (nr. 3009), Hs (nr. 3010), D (nr. 3011), Sc (nr. 3012). (The intercorrelations and the coefficients of reliability of the selected scales appear in Tables 6 and 7. Below follows the interpretational rationale of the choice of scales.) There is plenty of data on these scales both of patients and normal subjects. The following is a presentation of the central principles of their interpretation according to the works of Carson (1969), Graham (1977), Hedlund (1977), Kunce & Andersson (1976), and Wiggins (1969) and the study by the present author (Nieminen 1979, 199-204).

> The L scale was originally formed to survey the attitudes of subjects toward surveying, their attempts to comply with the expectations of their culture in their answers. High scores on the scale are interpreted as self-deception, excessive rigidity, or strive for perfection. In factor analysis, the L scale falls within the factor of defensiveness and spontaneousness. Especially Haan (1965) and Burish & Houston (1976) have surveyed the validity of the L scale as a measure of defensiveness. People who score high in the L scale have not developed a capacity to cope with stress or problematic situations. Their methods are not optimal from the view of mental health. With maximal effort, they can improve on their performance in situations of stress but the creative solution of problems is beyond them.
>
> The items of the Hs scale mainly consist of descriptions of somatic symptoms. No straightforward interpretation of it exists, e.g., in factor analysis it has high loading both with the factor of psychosis and acting-out and with the factor of neurosis and depression. On the basis of validity analysis, the scale is considered sooner a measure of psychic problems than of somatic symptoms. The scale was selected for the present survey primarily because of the prominence of somatic symptoms in earlier teacher studies (cf. pp. 78-80, 91- 92; Mäkinen 1974; 1980). The Hs scale has also been called the dimension of conservativeness. Its positive values reflect carefulness, conscientiousness, and sincereness and the negative ones dependence, irritability, and defense-like clinging onto somatic symptoms. Somatic symptoms may sometimes be experienced as more acceptable than psychic or social problems. Haan (1965) found a significant correlation between the Hs scale and a scale of defensive regression.
>
> The D scale falls within the factor of depression and neurosis in factor analysis. Both psychiatric and somatic patients acquire high scores in this scale. Its coef-

> ficients of re-test reliability remain low because of the sensitiveness of its values to momentary changes of mood. The D scale measures worrying, weariness, lack of self-confidence, anxiety, submergence in one's own problems, and depression. Positive scores on the scale may reflect objectivity, judgment, and realism.
>
> The basic dimension of Sc scale is imaginative capacity. Positive values on the scale can be interpreted as spontaneousness, creativeness, and divergent thinking; pathological values, again, as divergence, bizarreness, and irrational thinking, social alienation, isolation, extreme sensitiveness, and eccentricity of behavior. In factor analysis, the scale falls within the factor of psychosis and acting-out. Even the Sc scale correlated significantly with a scale of defensive regression in the study of Haan (1965).

If we recollect the aspects of personality described in the theoretical section as significant in the work and mental health of the teacher (cf. pp. 78-80, 91-92), it can be seen that the above scales survey many but not all of them. They provide insufficient information concerning the individual conception of one's social adjustment, hostility, and ego strength. As these characteristics have been shown important in the work of the teacher, the inventory was supplemented with three scales that measure these aspects of personality: the SOC, or the scale of social maladjustment (3013), and the HOS, or the scale of hostility (3014), of Wiggins (1966), and the ES, or the ego strength scale (3015), of Barron (1953). The items for these scales were selected according to the work by Blaser and Gehring (1972, 59, 107-108, 111).

> In factor analysis, the SOC (social maladjustment) scale falls within the factor of depression and neurosis. It measures lack of self-confidence, timidity, wariness, and reserve; pathological values reflect alienation and isolation and the negative ones sociability and a positive attitude toward life. The coefficients of reliability of the scale obtained by Wiggins (Graham 1977, 128-134) vary between .83 and .86.
>
> The Hos (manifest hostility) scale has high loading with the factor of psychosis and acting-out in factor analysis. Positive scores in the scale mirror activeness; pathological scores hostility, impulsiveness, passive negativism, grudge, criticalness, competition, and difficulties of cooperation. The coefficients of reliability given by Wiggins range from .65 to .82 (Graham 1977, 128-133, 138-139).
>
> The ES (ego strength) scale was developed by Barron for the examination of the capacity of neurotic patients to benefit from psychotherapy. Many studies have demonstra-

> ted the predictive value of the scale. The scale has been interpreted as measuring absence of chronic psychopathological symptoms, balance, responsibleness, patience, sociableness, and sense of reality. Earlier studies have come up with values of .72-.78 for the coefficient of reliability of the scale. The scale is opposite in content to the SOC scale. Various results point to its measuring slightly different characteristics with so-called normal than with patient material. So-called normals may strive for social acceptance in their answers. The scale does correlate with the L scale which, for its part, has been interpreted as measuring faking. (Barron 1953; Dahlström et al. 1975, 31-32; Graham 1977, 89-92)

The amount of missing answers, i.e., the number of questiòn marks, can also be considered a measure of defensiveness in the FAM. This kind of defense is rather primitive by nature, it is true; it reveals indecision and, when pathological, an obsessive symptom. A count of question marks has been included in the present survey.

The following tables are a presentation of the intercorrelations and Cronbach alphas of the FAM scales employed in this study both for the entire group of teachers and for group A.

Table 6. Intercorrelations and Cronbach alphas of the various FAM scales with group A (N=76)

Nr.	Name	REL	L	Hs	D	Sc	SOC	HOS	α
3007	REL								.65
3009	L	.30***							.64
3010	Hs	-.04	.22*						.67
3011	D	-.16	.01	.73***					.77
3012	Sc	-.23*	-.22*	.48***	.67***				.77
3013	SOC	.15	-.03	.18	.33***	.26**			.71
3014	HOS	-.31***	-.44***	.32***	.36***	.51***	.19		.74
3015	ES	.09	.39***	-.11	-.41***	-.57***	-.18	-.32***	.57

Level of significance (two-tailed test)
* p<.05
** p<.02
*** p<.01

Table 7. Intercorrelations and Cronbach alphas of the various FAM scales with the entire subject group (N=163)

Nr.	Name	REL	?	L	Hs	D	Sc	SOC	HOS	α
3007	REL									.66
3008	?	.01								-
3009	L	.26***	.06							.52
3010	Hs	-.06	.18*	.07						.54
3011	D	-.16	.20**	-.04	.63***					.75
3012	Sc	-.19*	.14	-.24***	.46***	.59***				.71
3013	SOC	.08	.08	.07	.13	.30***	.16			.62
3014	HOS	-.20**	.09	-.31***	.26***	.26***	.37***	.15		.71
3015	ES	.06	.09	.19**	-.20**	-.46***	-.59***	-.18*	-.27***	.43

Level of significance (two-tailed test)
*   p<.05
** p<.02
*** p<.01

One of the objectives in the selection of the FAM scales was to minimise the intercorrelation of the scales. This did not succeed too well. The intercorrelations of the Hs, D, and Sc scales turned out to be rather high. There would perhaps have been reason to abandon the D scale. This was not done, however, because this scale proved the most consistent in content. The alphas obtained here did not reach the level of those of corresponding American studies despite the corrections made in the scales. A slight improvement in reliability was nevertheless obtained by discarding those items that, in the item analysis, appeared to function poorly. The resulting higher reliability was considered satisfactory.

The above data indicate that the FAM does not operate as well with Finnish subjects as well as was to be expected on the basis of, i.e., the American student surveys.

7.3.1. Employment of the Rorschach test in the measurement of the functions of the ego and of some other aspects of personality

Functions of the ego (cf. pp. 40-42), i.e., those psychic processes of the individual which are not wholly under one's conscious control and which one does not even attempt to objectivate or analyze cognitively in an actual situation, mental capacity, and also the repressed elements and the pathological manifestations of personality are measured in this study with the Rorschach test.

In Rorschach testing, the subject is organizing and interpreting unstructured stimuli. The cues are not only visualized but also processed cognitively. So they must also have a symbolic meaning for the subject. Thus the Rorschach test measures both objective reactions and subjective experiences, the subjects' inner world (Aronow et al.1979). Rorschach himself (1948) defined his method as a test of form interpretation (Formdeutversuch).

According to Viitamäki (1978, 214-219) the most central principles of interpretation of the Rorschach test are: form responses indicate intellectual control, human movement responses psychic energy, color responses emotion, and shading responses deep internal experience and feeling.

Primarly Rorschach's test was not based on any personality theory, although some of his interpretations are from Jung's analytical psychology. Later the psychoanalytically oriented researchers have especially created content variables interpretable according to the same principles as free associations or dreams (Holt 1978; Schachtel 1966; Schafer 1954).

Zubin et al. (1965, 153-155) have understood the nature of Rorschach test as multidimensional and used it eclectically. They see the test not as measuring perception primarily but instead conceive its interpretations as based on motivation, attitudes, individual differences of reaction to ambivalent stimuli, and acquired models of response. Rorschach testing can be considered an interview in which the offered cues require both cognitive and non-verbal interpretation. Thus the employed variables are based not only on the form and content of the responses but also on other documented behavior in the testing situation such as use of time, criticism, explanations, uncertainties of interpretation, or repression of stimuli, i.e., both verbal and nonverbal reactions will be utilized. In the present study the Rorschach test is understood and its variables developed in the way of Zubin et al. (1965).

7.3.2. Reliability and validity of the Rorschach test

The reliability of the Rorschach test has been measured in various ways, i.a., through the examination of the consistency of scoring, through re-testing and parallel testing, and with the split-half method and factor analysis. The permanence of the responses has also been investigated. Some of the methods applied to the testing of reliability have been alien to the nature of the Rorschach test and one is forced to ask whether their results carry any significance at all. The fact is that the test is holistic by nature and that atomistic approaches do it injustice.

To summarize the results of several research projects, it can be stated that high coefficients of reliability have been obtained quite consistently for psychograms (.94), and comparatively high ones for content, form, and movement variables (.70). These are variables that measure the intergration of personality, the level and quality of perception, cognitive deduction, and the content of lines of thinking. Reliability is lowest with shading and color response variables, which are thought to measure emotions and affects. These results are logical and congruent with the general notions about the stability of aspects of personality. (Reznikoff et al. 1982; Rickers-Ovsiankina 1977, 555-574; Zubin et al. 1965, 181-193)

The consistency of scoring ranges from 70 % to 99 % (correspondence values from .71 to .99) with different evaluators. The greatest consistency is reached in the scoring of content variables but also the scoring of form and movement responses is highly consistent. The scoring of color, shading, and vista responses shows the least consistency. (Nieminen 1970, 156-159; Reznikoff et al. 1982; Rickers-Ovsiankina 1977, 560; Virkkunen 1970, 70; Zubin et al. 1965, 185)

In this survey, the factor analysis-derived communalities will be employed in the determination of that part of the reliability of the Rorschach test which is reflected in the inner constancy of its variables. The uniformity of the scoring of the employed variables has been studied earlier by the present author. For instance, in the survey of frontier guards the correspondence of the scoring of two evaluators was of the order of 80 %.

A whole range of surveys concerning the validity of the Rorschach test have been performed in Finland also, particularly at the University of Helsinki under the supervision of Professor Viitamäki. Though it is not possible to examine all these studies in detail here, those which have had direct bearing on the choice and development of variables and the interpretation of results in the present survey will be introduced further on.

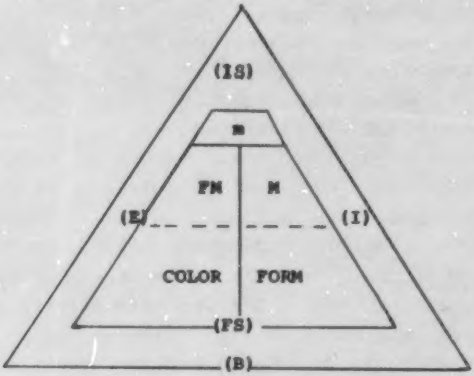
A general observation of the studies on the validity of the Rorschach test has been the superior reliability and content validity of those variables and indices that show relatively high frequencies and whose scores are affected by every response. Also, the universally accepted interpretations and some content variables have displayed high validity. (Nieminen 1970, 159-160; Rickers-Ovsiankina 1977, 575-608; Zubin et al. 1965, 193-239)

There are conflicting views about the usability of factor analysis in validity studies of the Rorschach test. In his synopsis of 21 factor analytical studies, Murstein (1965, 395-400) presents severe criticism mainly of the technical difficulties of the method. Contrariwise, Zubin (1965, 196) considers the performed factor analyses successful in the investigation of the validity of the Rorschach test. The factor analyses compiled by Murstein quite consistently reveal productivity, intelligence, perceptual control, fluency, and internal control as the central dimensions of the test. Survey of emotional experiences is an essential feature in Rorschach test interpretations on the level of the individual. This dimension is, however, easily obscured in factor analytical studies because of its transient nature.

Wagner's structure analytic model (1978) clarifies interpretation of the Rorschach test. It corresponds to results obtained in the factor analysis above. The structural analysis of personality can be presented topologically as a triangle composed of behavior, intellect, and emotion. Psychological activity is arranged in a continuum of behavior - facade self - introspective self, where the processes consist of, i.a., reflection, shaping of a role in life, and fantasy. The basic dimensions of the Rorschach test fall within this triangle. According to Wagner, however, not all of the essential psychic processes are measurable with the Rorschach test. The attitudes and facade of social self mainly are expressed in the behavior, and are not measured with projective techniques. The introspective self belongs to the deepest layers of personality and cannot be directly observed. In research, it is approached indirectly.

Figure 4

THE POSITION OF THE ROSCHACH TEST VARIABLES IN THE STRUCTURAL MODEL



M = human movement
FM = animal movement
m = inorganic movement

IS = introspective self
E = emotion
I = intellect
FS = facade self
B = behavior

Figure 4 illustrates the area within the structure of personality measured by the Rorschach test. It shows that the test measures neither actual behavior nor fantasy as such. The color and form responses are the most closely related to actual behavior whereas the movement responses reflect more the internal psychic processes. The animal responses are closer to emotions than the responses describing human movement. The latter, again, are the nearest to fantasy.

Schwartz and Lazar (1979) maintain that the content variables of the Rorschach test are not objective as sources of information and that they are thus unfit for statistical analysis. They consider the results of the test to be primarily semantic. Thus it is the problem of meaning that is significant in the interpretation of the test and therefore the interpretation should be semantic rather than statistical. The contents of meaning of the responses are only interpretable in a frame of reference constituted by the consciousness and experience of the individual. These meanings are born in social and cultural life but also as experiences produced by the body; they can be regarded as containing general human factors as well.

According to the stand taken in the present study, the meanings contained in the responses of the Rorschach test can be subjected to statistical analysis because of their general human applicability. The objective here is not the procurement of predictions on the individual level but the survey and examination of general trends. The Rorschach test is understood as revealing some of the essential elements of the process whereby the individual forms his contents of meaning. The test comprises both experiences of one's life and one's learnt models of response, as well as structuring of the actual situational factors.

7.3.3. The choice and development of the Rorschach test variables of the present survey

The choice of the Rorschach test variables is affected by three types of factors:

1) The nature of the test and the restrictions this imposes upon the selection of variables.

2) The dimensional model of personality presented by Coan (cf. pp. 55-58) constitutes one of the bases of this study. The aim is to select variables accordingly.

3) It is an objective of this study to survey such dimensions of the personality of teachers that have been demonstrated significant in earlier teacher surveys (cf. pp. 91-92).

Such formation of variables from the test responses will be attempted that will allow statistical analysis and produce variables relevant from the view of the dimensional model of personality and variables significant as revealers of psychopathological states.

The interpretation of Rorschach test responses is based on certain ratios of variables and special features of the responses. Because of this aspect of the test, the general aim of the study - the most simple and explicit explanation possible of the structure of personality - is not realized in the Rorschach test. The variables always intercorrelate to some extent. As it is, a variable can have a different interpretational significance in a different connection and thus it cannot be exluded despite its correlation with another variable in some connection. The employment of interpretationally parallel intercorrelating variables and the formation of technical correlations are avoided whenever possible.

The selected variables include, i.a., such classical variables (scoring according to Klopfer et al. 1954) which have proved useful in previous research and student exercises carried out and supervised by the present author. This also makes possible a comparison between the results obtained here and those published earlier. The majority of the variables have been formed according to the scaling technique of Zubin et al. (1965, 317-369). A few of these have nevertheless been modified to render them more functional. This was done, for example, with scales that were based on such minute classification that sufficiently high frequencies would otherwise have been unobtainable. Here the variables had to be pooled. Some other scales, again, were very complex in structure and practice shows that the information surveyed by them can be obtained with structurally less complex and more economical variables.

The varying number of responses (R) recorded in the test situation presents a problem in the formation of variables. The varying number directly affects some variables but not all. The relationship of R to the other variables is not linear or constant; it has a complex, non-linear, and variable-dependent effect on the test (Zubin et al. 1965, 182). In this study, elimination of the effect of R is sought through division of the score of the variable with R in cases where previous studies have shown it to have an effect on the variable (Nieminen 1970, 160-163).

The purpose of the scaling models of Zubin et al. is to mold the Rorschach test responses into variables which are well adapted to statistical analysis and whose frequency and deviation are adequate, i.e., influenced by almost every response. Some of these variables may fulfil the criteria of a ratio scale; at least they all conform to an ordinal scale.

Zubin et al. mainly availed themselves of factor and structure analytical studies of the Rorschach test in their formation of the variables, but they also adopted some models of interpretation intuitively developed by experienced diagnosticians. Their variables cover the basic dimensions of the test.

When normal distributions and sufficient frequencies are pursued in the development of variables, the possibility of observing some individual reactions is lost. Although models of scaling directed at statistical functionality are generally inappropriate in the diagnosis of individuals, their use can be justified if general trends are surveyed at the same time.

The functionality of the variables employed in this study has been investigated by the present author in earlier studies (Nieminen 1970; 1980a) and in some student exercises. The variables selected in this survey are ones that have acquired sufficiently high communalities, of the order of .30, in earlier factor analyses. The variables of affectional phenomena do not entirely fulfil this condition, however.

The sum variables that measure defenses have been devised especially for the present survey. They are based on earlier clinical studies and the functionality of their items has been surveyed in the aforementioned study of frontier guards (Nieminen 1980a, 74-102). It was the factor analyses performed in connection with the latter that directed the formation of the sum variables.

The means, deviations, and communalities obtained in the 1980 survey of frontier guards, for the variables chosen in the present study, are displayed in Appendix 12.

7.3.4. The Rorschach test variables selected

The following is a brief account of the selected variables of the Rorschach test. The variables and their scoring is presented in detail in Appendix 13. The interpretations of the principal content of the variables are based on widely accepted and empirically verified interpretational hypotheses concerning the test. The purpose of listing these interpretations in this context is to provide the reader with the possibility of evaluating whether the selected variables correspond to the aforementioned objectives.

3029 R	Total responses. A factor of productivity. (Klopfer et al. 1954, 243, 311)
3030 T/R	Average time per response. The swiftness - slowness of reaction. (Klopfer et al. 1954, 243)
3031 $\bar{x}$ (W-P)	The largeness of the area of the card covered by the response. The openness - narrowness of perceptual field. The capacity for organization and integration of perceptions. (Klopfer et al. 1954, 299-309; Zubin et al. 1965, 354)
3032 ΣS	Utilization of the white area in responses. Intellectual opposition and independence. (Klopfer et al, 1954, 309-310; Zubin et al. 1965, 347)
3033 $\bar{x}$ m	The significance of movement in the response. Mental flexibility, intellectual capacity, creativity, and productivity. (Klopfer et al. 1954, 254-267; Zubin et al. 1965, 343)
3034 F%	The percentage of pure form responses. Keeping to the realities, objectivity. (Klopfer et al. 1954, 95-100, 294-296)

3035 $\bar{x}$ C	The significance of color in the responses. Emotional mode of reaction, susceptibleness to environmental influence. (Klopfer et al. 1954, 278-287; Rubin et al. 1965, 332-333)
3036 FC:(CF+C)	The ratio of form-color responses to color responses. Emotional control. (Klopfer et al. 1954, 277, 296-297)
3037 ET	Experience type either introversive or extratensive. (Klopfer et al. 1954, 243, 370-373)
3038 EA	Experience actual: the emotional life in its totality. (Beck & Molish 1967, 11-12)
3039 $\bar{x}$ K+k etc.	Utilization of shading, vistas, or texture in the responses. Affective experience, empathy, even anxiety. (Klopfer et al. 1954, 267-275; Rubin et al. 1965, 336-337) Here different qualities have been pooled because of the lowness of their individual frequencies. Some support of this procedure comes from the factor analyses performed in the survey of frontier guards. The general interpretations of these variables run parallel though each one of them also has a specific interpretation of its own.
3040 Form.-Qual.	Number of form responses in relation to achromatic qualitative responses. The subject is either keeping to objective reality or interpreting his experiences. (Klopfer et al. 1954, 291)
3041 GL	The Genetic Level scale of Becker (1956). Its idea is derived from the developmental theory of Werner and the original model from the development scale of Friedman. Studies show that it corresponds fairly well to the FL variable of Klopfer (Klopfer et al. 1954, 244-245). The scale measures the level of differentiation and integra-

	tion of the perceptual and deductive processes, i.e., cognitive control.
3042 H% 3043 x (A-S) 3044 x PD	Human responses, the independence - submission and personal nearness - remoteness relationships of interpretations can be considered ego-identity variables (cf. p. 41). As ego-identity is considered primarily an effect of human interaction, the interpretation can be put forward that these variables always measure even the social relations of an individual.
3045 A%	Animal responses have been included as they proved significant factors of isolation in the survey of frontier quards (Nieminen 1980a, 94). The usual interpretation of this variable is, however, that it is a measure of a sense of reality, i.e., of conscious and, in the extreme, stereotypic thinking (Klopfer et al. 1954, 314, 382-383).
3046 P%	The percentage of popular responses can be interpreted as a measure of ways of thinking that are popular and recurrent in a culture, i.e., as a certain, mostly cognitive, sociality. (Klopfer et al. 1954, 202-203; Mattlar et al. 1978, 33)
3047 RI	Neiger's reality index measures the same factors as the preceding variable but on a more general level. As it is, the former is related to national norms while the latter stands in relation to the habits of perception and thinking of Western culture. (Bohm 1960, 24)
3048 £O+	Original responses of good form level are interpreted as expressions of intellectual capacity and creativity. (Klopfer et al. 1954, 205-206, 313, 359)

3049 Σ AT	Anatomical responses are interpreted as expressions of an intelligence complex and anxiety. These responses accumulate in subjects with somatic symptoms. (Klopfer et al. 1954, 383-384)
3050 Σ Agg.	The aggressive contents of the responses are interpreted as expressions of frustration, anxiety, and hostility but they can also signify energy. Former studies indicate that these responses are nevertheless mainly associated with mental images which seldom manifest themselves as open aggression but, instead, as grudge and passive hostility. (Crain & Smoke 1981; Elizur 1949; Goldfried et al. 1971, 100-116; Holt 1978, 211-224, 249-330; Holt & Havel 1960; Klopfer et al. 1954, 381; Nieminen 1970, 181-183; Zubin et al. 1965, 578)
3051 Adapt.reg.	The formation and interpretation of the variable of adaptive regression of this study is based on ideas presented by Holt (1978, 225-230) and Holt & Havel (1960). The variable can be considered principally as measuring the sources of creativity and mental flexibility, i.e., the resources of coping activity.
3052 Rep.	The scale of repression is formed on the basis of the following surveys where its determinants have displayed internal validity: Bahnson & Bahnson (1966), Viitamäki (1970), and Nieminen (1980a, 92).
3053 Intell.	The scale of intellectuality is based on the scales of metacommunication by Zubin et al. (1965, 356-357) and the studies of Furustrand (1976, variable 115) and Nieminen (1980a, 94, 98).
3054 Reg.	The scale of regression is based on studies by Järvinen

	(1973, 111) and Nieminen (1980a, 100).
3055 Proj.	The scale of projection is based on studies by Furustrand (1976, variable 119), Järvinen (1973, 89-90), and Viitamäki (1968).
3056 Narc.	The scale of narcissism has been developed by Viitamäki (1968).

The selected variables of the Rorschach test represent quite well the above-presented basic dimensions of the test; these dimensions included intellectual control, psychic energy, emotions, internal experience (cf. Viitamäki, p. 123), productivity, intelligence, perceptual control, fluency, and internal control (cf. Murstein, p. 125). Whichever of Coan's dimensional models (cf. pp. 55-58) is employed, the scales for the measurement of the aspects of personality described by them are found among the selected variables; these include the variables for openness, harmony between the intra and interpsychic relations, subjective vs. objective attitude, self-confidence, optimistic attitude toward the world vs. keeping to reality, efficiency, creativity, inner harmony, relatedness, and transcendence. The last dimension of either model is problematic, but if transcendence can be understood as deep affective experiences, as an openness to these, and as a feeling of unity with one's fellowmen and the entire universe, the following variables may measure it: 3031, 3038, 3035, 3039; some of the symbolic universe responses can also be considered as such. The latter, however, were not scored separately in the present study.

The aforementioned teacher surveys (cf. pp. 91-92) listed the following deviant reactions of teachers as significant: anxiety, aggression, hostility, isolation, and somatic dysfunction. These aspects as well as the manifestations of a deranged self-conception, or narcissism, and some other pathological reactions such as defenses are well covered by the selected variables.

7.4. Measurement of job satisfaction

The survey concerning the mental health of frontier guards (Nieminen 1980a) demonstrated convincingly the significant correspondence of experienced mental health to the experienced amount of work, the makeup of the job, and the working environment, i.e., to the cardinal factors of job satisfaction, occupational stress, and work load. The connection between job satisfaction and health was also examined in the teacher survey by Mäkinen presented above (cf. p. 80). Since work is considered as constituting an essential part of life and an important channel of self-realization for people with in the age group of the teachers surveyed - this applies especially to teachers of group A (cf. p. 58-59) - it was deemed significant to survey even job satisfaction.

The concept of job satisfaction is derived from Herzberg et al. (1957) and Vroom (1964, 105). They include two sets of factors in the concept: those concerning the substance of the work and those associated with the work environment, i.e., the factors of hygiene. Helkama (1981, 36) introduces a new view into the concept by defining job satisfaction as the relation of the job expected to the job experienced as perceived by the individual. The definition in this case is based on individual valuations and expectations.

Torrington and Cooper (1977) describe the following factors of occupational stress and work load: amount of work, effect of work on spare time, role of employees in the organization, functionality of the organization, human relations of the job, and career span.

In defining job satisfaction in connection with a survey of the job satisfaction of teachers, Louhimo (1969, 20-25) has relied primarily on the satisfaction theory of Homans (1961) which emphasizes social interaction. Louhimo concentrates, i.a., on the investigation of the harmony between the pupils and the teacher (cf. p. 81).

It became clear already in the preinterviews of this study, that efforts of arranging the so-called occupational hygiene factors into statistically functional continuities would be in vain. These factors are too specific and school-dependent. Except for the teachers from Helsinki, the teachers covered by the present survey considered their school equipment satisfactory. On the contrary, the social and working facilities left more to be hoped for, but even here the defects were school-dependent. Nor could a functional variable to be formed of the experienced work load of teachers. It seems to be dependent on the size of class, which again varies very much from teacher to teacher. None of the teachers experienced their job as a hindrance to spare time activities. These activities were so diverse and different in amount among the groups studied that a survey of them was neither possible nor relevant to the present survey.

The factors of job satisfaction examined in this survey comprise factors associated with the makeup of the job and its human relations as well as factors of the correspondence of values and expectations: success in the choice of career in relation to expectations and objectives, personal satisfaction in the work of a teacher, experienced valuation of the profession, and subjective human relations.

The teachers were given 17 statements (cf. Appendix 14) concerning their job; some of these were the same as those used in the survey of the mental health of frontier guards except that they were modified to correspond to the working conditions of teachers. Some items were also picked from Louhimo's survey of the job satisfaction of teachers (1969). The subjects of her survey belong to the same age group as the teachers studied in this survey which allows for interesting comparisons to be made.

In order to make the questionnaire data more concise, factor analysis with the principal axis model and the varimax rotation was performed. The eigenvalues obtained only allowed the acceptance of three factors; after the third factor the eigenvalues dropped significantly below 1.

The three-factor solution explains 39.1 % of the total variance and 85 % of the estimated sum of communalities. The percentages of explanation of the individual factors are relatively high. Also the interpretation of the factor solution is straightforward. It is compatible with some of the conditions of a simple solution but not all. It does not, e.g., contain enough zero loadings in the various lines and columns.

The first factor was named the dimension of satisfaction with the makeup of the job. This factor acquires high loadings in items which describe the correspondence between the work, the objectives, the plans, the expectations, and the abilities of the individual. These items also include descriptions of one's work as interesting and self-esteem promoting. The percentage of total variance explained by the factor is 18.7 %; its proportion of the variance explained by the three-factor solution is 48 %. Corresponding to the factor, a sum variable (nr. 3020, 5 variables) of satisfaction with the makeup of the job was formed. Its alpha is .80.

The second factor was named the dimension of job valuation. It loads items which include showing of confidence and commendation by one's superior, general valuation of the teaching profession, and advancement in one's career. The factor explains 10.7 % of the total variance and 27 % of the variance explained by the three-factor solution. Corresponding to the factor, a sum variable (nr. 3022, 4 variables) of job valuation was formed. Its alpha is .70.

The third factor was named the dimension of human relations. It loads items which describe the relation of the teacher to his colleagues, his superiors, his pupils, and to the planning of schoolwork. The factor explains 9.7 % of the total variance and 25 % of the variance explained by the three-factor solution. Corresponding to the factor, a sum variable (nr. 3021, 3 variables) of human relations was formed. Its alpha is .71.

Table 8. The intercorrelations of the sum variables of job satisfaction

Variable	3020	3021
3020		
3021	.29	
3022	.44	.30

The level of statistical significance of each of the correlation coefficients is of the order of $p<.01$ (two-tailed test).

The formed sum variables can be considered sufficiently consistent in internal structure. Their intercorrelations are in the significant range, it is true; they are not too high, however. The sum variables are thus suited for further analysis. According to the above-presented definitions, they also measure essential determinants of job satisfaction. The first two of the sum variables are the same as in the survey of frontier guards and they partly concide with those obtained by Louhimo. Her factor solution did contain five factors but then her questionnaire too comprised 35 items, or twice as many as the present one.

The items of the job satisfaction questionnaire are presented in Appendix 14, their means, their deviations, the correlation matrix, the communalities, the eigenvalues, the factor loadings, and the three-factor solution in Appendices 15-18, and the formed sum variables in Appendix 19.

7.5. Estimation of the psychic and physical health of the subjects

The topics of the thematic interview (cf. Appendix 20) also included the psychic and physical well-being of the teachers (group A). The knowledge and experience acquired in this interview formed the basis of the evaluation of psychic and physical health. The estimation of psychic health makes use of the classification of Väisänen (1975, 42-43) which he applied to the estimation of the morbidity of the entire population. His classification was, however, unsuited as such for the present survey and thus a combination of the classes of severe disturbances and a division in two of the class of the so-called healthy was made. As it is, all the teachers surveyed here are active in occupational life and thus they must be considered healthy as a rule. The scale (nr. 3028) and its scoring is shown in detail in Appendix 21. The classification of the physical health of the subjects is tripartite: the fully healthy, the ones with mild or temporary symptoms, and the chronically ill (nr. 3090, Appendix 22).

7.6. Demographic and other regressors

This group comprises variables associated with the family relations, location of school, career, school, earlier academic achievements, degrees, and experienced changes in life of the teachers. These variables are presented in detail in Appendices 1, 23 and 24.

Intelligence tests in the true sense of the word have not been employed in this survey even if it is understood that the level of intellectual deduction does affect the formation of contents of meaning. The subject group has nevertheless been considered homogenous to the extent that differences in intellectual deduction hardly constitute discriminative factors. Despite the decisively greater heterogeneity of the educational level of the frontier guards, no real explanative value could be attached to intelligence or performance tests in the survey of 1979 (Nieminen 1980a). The academic achievements and many variables of the Rorschach test, naturally do survey some factors of intellectual deduction.

8. TECHNICAL EXECUTION OF THE SURVEY

8.1. Collection of data

The Rorschach test was first presented to the teachers of group A when they began their teacher training in the academic year 1958-1959. The men were tested by the present author and the women by Touko Malmi, M.A. The present author met the teachers again in 1980 and this time performed the whole program of the study consisting of questionnaires (Appendices 2, 3 8, 9, 14), of a Rorschach test and of a thematic interview (Appendix 20).

The members of group B were pupils of the present author in the academic year 1977-1978. They were presented the questionnaires during their regular classes. The individual tests were performed by Merja Majakero, B.A., in the spring semester of 1978. Re-evaluation was made with mailed questionnaires in 1980.

The fact that several people have acted as testers presents problems of validity in the Rorschach test. The estimation of the stimulus value of the different testers becomes difficult in this aspect. This was nevertheless unavoidable; e.g., ethical reasons prevented the author from testing her own pupils. All of the Rorschach test records were scored by the author which makes the testing uniform in this respect.

8.2. Statistical methods of analysis

Factor and item analyses were already applied in the development of the variables of the survey as presented in Chapter 7. In the next chapters factor analysis is also employed in the elucidation of the essential dimensions and basic structures of personality and mental health. Especially in cases with large numbers of variables, factor analysis efficiently compacts the covariation data and thus makes the principal outlines of the variation discernible. The nature of factor analysis and some other multivariate methods make them best adapted for empirical testing of the theoretical hypotheses of humanistic psychology that deal with universal phenomena.

In the processing of the results, factor scores are used instead of the variables that constitute the dimensions whenever justified. This is possible when a performed factor analysis fulfils the necessary statistical and interpretational criteria:

- The factors include the interpretationally relevant elements.
- Variance has not been over or under-interpreted.
- The factor scores are reliable.

The survey also examines the differences between group A and group B, between the sexes, and also between the separate testing occasions. The Critical Ratio (CR) is employed in the analysis of statistically significant differences of averages between independent groups of over 30 subjects, Student's test for dependent groups, again, in the analysis of dependent groups, and Student's test for independent groups in the analysis of small independent groups of subjects.

In addition to statistically significant differences, statistically significant correlations are analyzed; the method here is the calculation of Pearson's product moment correlation coefficient, r. Determination of the level of significance is performed with the one or two-tailed Student's test. The former is used when preliminary data or assumptions exist of differences or correlations, otherwise the latter is employed.

The survey proposes to examine historical trends in the dimensions acquired through factor analysis. Regression analysis is used in the analysis and in the description of the essential determinants of these trends.

In this survey, the functionality of variables was examined on the basis of means and deviations. Variables that displayed a skew distribution (nr. 3035) or in whose deviations the extreme values had too much weight in the calculation of the mean (nr. 3008) were rejected from further analysis. In general, the variables function quite satisfactorily which was already to be expected on the basis of the way they were composed.

It is open to discussion whether the manner of employment of the mean, e.g., in the testing of the significance of differences, serves its purpose. For some variables, the utilization of medians would probably have been more justified. It is customary, however, to express the values of the FAM and Rorschach test variables either as means or as percentages. If medians had been employed here, comparison with available norms would have become difficult and mathematically tedious.

The next chapter will be devoted to an examination of the means and deviations of the variables.

9. RESULTS

9.1. Characterization of the surveyed group of teachers with means, deviations, and some per cent values

9.1.1. The attitudes toward mental health and associated etiological explanations (variables 3000-3006, means and deviations in Table 9)

The means and deviations of the variables concerning mental health attitudes and etiological explanations (nr. 3000-3003) show that teachers stress the psychological and social determinants of mental health but often reject the religious and moral explanations. Psychological understanding is prominent in the attitudes; consequently social restriction is little emphasized.

Table 9. Means and deviations of variables

Variable	Total group (1980+1978) N = 159		Group A1 (1980) N = 76		Group B1 (1978) N = 83		Group B2 (1980) N = 59	
	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s
3000 Rel.mor.et.	25.0	7.9	24.6	7.5	25.3	8.3	23.3	8.4
3001 Psyc.soc.et.	43.8	6.4	43.8	5.8	43.7	6.9	43.2	5.9
3002 Soc.res.	20.0	6.0	19.9	5.5	20.1	6.5	17.7	4.7
3003 Psyc.und.	23.9	3.6	25.1	3.7	22.9	3.2	23.0	2.8
3004 Psyc.et.	4.5	2.6	4.2	2.7	4.8	2.5	6.1	2.9
3005 Psyc.biol.et.	8.1	3.1	8.7	3.2	7.4	2.8	7.0	3.1
3006 Biol.et.	11.5	4.5	11.0	4.8	11.9	4.2	11.8	4.3
3007 REL	2.5	1.2	2.4	1.2	2.5	1.3		
3008 F	7.6	9.2	5.0	5.8	10.1	11.0		
3009 L	2.9	1.7	2.9	1.8	2.8	1.6		
3010 Hs	2.6	2.0	2.6	2.2	2.6	1.8		
3011 D	5.1	3.2	5.5	3.4	4.7	3.0		
3012 Sc	4.8	3.1	4.1	3.2	5.4	2.8		
3013 SOC	2.9	1.9	3.1	2.1	2.8	1.8		
3014 HOS	4.5	2.6	4.1	2.9	4.8	2.2		
3015 ES	5.8	1.3	5.9	1.4	5.6	1.3		
3016 Age	32.6	11.6	43.8	3.0	21.8	2.5	21.7	3.5
3017 Sex	1.6	0.5	1.5	0.5			1.7	0.5
3020 Job sat. I			16.0	2.4				
3021 Job sat. III			9.9	1.6				
3022 Job sat. II			12.2	2.0				
3028 Ment.hlth			3.5	1.0				
3090 Phys.hlth			2.3	0.7				

The questionnaire of the present survey has no direct equivalent in earlier research rendering direct comparison impossible. Compared with the results obtained by the author and Majakero (Nieminen 1979, 143-193), teachers seem to emphasize significantly more the religious and moralistic and the psychological and social etiologies as well as psychological understanding, whereas social restriction is on the same level. Apparently persons recruited into the teaching career have an above-average interest in psychological and social as well as religious and moralistic approaches. This result seems to be in agreement with those expectations concerning the role of the teacher and the aspects of his personality that come up in the publications reviewed in the theoretical section (cf. pp. 60-64).

In their explanations of the etiology of health (nr. 3004-3006, Table 9, p. 143), the teachers emphasize the biological etiology rather than the psychological. The latter explanations fail to reach even half of the former in frequency (cf. variables 3004 and 3006 as they have been scored in a similar way). These variables of etiological explanation have not been used in earlier research which precludes comparison with other groups.

9.1.2. Experienced mental health: the FAM variables (nr. 3007-3015, means and deviations in Table 9, p. 143)

The number of question marks in the FAM items (nr. 3008) is rather high, especially with group B. This may reduce the reliability of the results. The number of question marks does not so much affect the scales formed especially for this survey because the least functional items were discarded when the variables were composed, but it may reflect a defensive attitude toward the survey. The fact that deviation of the number of question marks is of the same order as their means shows that questions marks accumulate on a few individuals. This variable was rejected from further analysis in the case of group A because of its great deviation.

The FAM scales were especially developed for this survey and thus they cannot be directly compared with the classical scales. Comparisons were made here, however, between the means and deviations of individual items and corresponding data obtained with normal

Finnish material. Statistically significant differences came up neither with the entire teacher group, the men, the women, nor with group A or group B. The means obtained in the scales of pathological behavior remain low relative to the maximum scores possible.

It has been found in earlier research that the MMPI scales produce statistically significant differences between standard values and the results of teachers. These findings, however, have later been shown to contain inconsistencies. (Cf. p. 113; Getzels & Jackson 1963, 534-545)

A majority of the teachers express a religious conviction (nr. 3007; group A 66%, group B 59 %). The teachers' evaluation of their self-esteem (nr. 3015, ES scale) is relatively high.

9.1.3. Variables of the Rorschach test (nr. 3029-3056, means and deviations in Table 10, p. 146)

Owing to the manner of scoring adopted in this survey, only some of the Rorschach test variables can be compared with general norms. In comparison with the norms of the Finnish population presented by Mattlar et al. (1981; Appendices 7-8, 12-13, 16), some variables of this survey are seen to differ markedly from the norm. The teachers here have fewer form responses, F% (nr. 3034), and less achromatic qualities (nr. 3039), AT (nr. 3049), and 0+ (nr. 3048) in their responses whereas higher values are shown by H% (nr. 3042) and P% (nr. 3046) in comparison with the Finnish norms in the same age range. A% (nr. 3045) is of the same level in the two sets of data. In comparison with the results of Viitamäki (1968, 3) there are marked differences only in the chromatic and original responses: Teachers use them more seldom.

Systematical comparison is possible with the results of the frontier guards as the mode of Rorschach test scoring is identical in the two surveys (cf. Appendix 13). The following table is a compilation of the most marked differences between the results of the teachers and the frontier guards.

Table 10. Rorschach test variables: means and deviations

Variable	Total group (1980+1978) N=165 $\bar{x}$	 s	Group A1 (1980) N=76 $\bar{x}$	 s	Group A2 (1958) N=93 $\bar{x}$	 s	Group B1 (1978) N=89 $\bar{x}$	 s
3029 R	18.5	8.0	16.7	3.9	18.9	8.2	20.0	10.1
3030 T/R	28.1	12.7	36.8	10.3	49.3	18.7	19.8	8.6
3031 $\bar{x}$ (W-P)	2.4	0.4	2.2	0.4	2.0	0.4	2.5	0.4
3032 ΣS	0.6	0.5	0.6	0.5	0.6	0.6	0.6	0.6
3033 $\bar{x}$ m	1.1	0.5	1.1	0.4	1.0	0.4	1.1	0.5
3034 F%	32.6	13.6	33.0	12.8	35.9	15.9	32.2	14.4
3035 $\bar{x}$ C	0.6	0.3	0.5	0.3	0.4	0.3	0.6	0.3
3036 FC:(CF+C)			10.9	9.7	10.9	10.5	6.1	7.2
3037 ET	10.4	1.8	10.5	1.0	10.5	1.3	10.2	1.7
3038 EA	7.0	3.3	6.5	2.3	6.0	2.9	7.4	4.0
3039 $\bar{x}$ K+k etc.	1.5	0.9	1.4	0.6	1.7	0.9	1.6	1.0
3040 Form.-Qal.	17.3	2.2	17.9	1.8	17.8	2.0	16.9	2.5
3041 GL	4.0	0.4	4.0	0.3	4.0	0.3	4.0	0.4
3042 H%	24.8	12.0	24.7	10.2	27.5	11.1	25.2	13.0
3043 $\bar{x}$ (A-S)	2.5	0.5	2.4	0.4	2.4	0.5	2.5	0.5
3044 $\bar{x}$ PD	2.4	0.7	2.3	0.6	2.4	0.7	2.6	0.7
3045 A%	37.4	11.2	38.4	10.8	39.2	11.0	36.3	11.4
3046 P%	43.3	13.0	44.7	12.1	38.5	12.0	42.3	13.9
3047 RI	5.5	1.5	5.6	1.6	5.6	1.8	5.4	1.5
3048 ΣO+	0.8	1.0	0.7	0.9	0.8	1.0	0.9	1.1
3049 ΣAT	1.2	1.4	0.8	1.1	1.0	1.3	1.6	1.6
3050 ΣAgg.	7.6	4.6	6.2	3.6	6.6	4.6	8.9	4.9
3051 Adapt.reg.	22.9	12.2	19.1	9.9	15.4	9.0	26.1	13.0
3052 Rep.	5.1	3.9	4.1	3.7	10.3	8.2	6.0	3.8
3053 Intell.	5.2	3.1	3.9	2.4	3.0	1.9	6.4	3.2
3054 Reg.	6.7	4.0	4.9	2.4	5.4	2.7	8.2	4.4
3055 Proj.	5.0	2.7	4.8	2.2	5.3	3.3	5.3	3.1
3056 Narc.	5.0	2.7	4.3	2.2	2.5	1.9	5.6	2.9

Table 11. Statistically significant differences between the teachers and the frontier guards in the Rorschach test variables

Variable	CR	p<
3029 R	2.53	.05
3030 T/R	-2.23	.05
3037 ET	8.00	.001
3040 Form.-Qual.	2.25	.05
3041 GL	5.00	.001
3042 H%	5.00	.001
3043 $\bar{x}$ (A-S)	-2.10	.05
3045 A%	-3.40	.001
3048 ΣO+	2.00	.05

The differences in the above table can be interpreted to indicate that the surveyed teachers are more productive, cognitively oriented, and controlled than the frontier guards. Perhaps in part as a result of their profession, the teachers attach more importance than the frontier guards to human relations.

The surveyed teachers can be described as sociable, well developed in perceptual control, and cognitively oriented but also as poor in emotional expression. The overall differences obtained do not indicate pathological reactions in the teachers. The results obtained by the teachers fall within normal limits, on the average.

9.1.4. The job satisfaction variables (nr. 3020-3022, means and deviations in Table 9, p. 143)

The means of the job satisfaction variables indicate that the surveyed teachers generally express contentment with their job and its human relations. The sum variables as such are not directly comparable with earlier surveys. In an itemwise comparison with the results of the frontier guards (Nieminen 1980a, 138, 147), the teachers turn out to be more satisfied (statistical significance) than the frontier guards.

Itemwise comparison with the results of Louhimo (1969, Appendix 2) yields same level of job satisfaction in the two surveys. Our results do not support the contentions of the media that teachers´ dissatisfaction with their occupation has increased during the last few years.

The results obtained here are not commensurable with those of Mäkinen (1980/144; cf pp. 79-80) because of the different wording in the items of the two surveys. Mäkinen, too, describes the average teacher as satisfied in his job.

9.1.5. Estimation of psychic and physical health (nr. 3028, 3090, means and deviations in Table 9, p. 143)

The author´s evaluations of the psychic health of the teachers can also be observed as percentages. Following the classification in Appendix 21, 17 % of the surveyed teachers were classified as completely healthy, 34 % as having slight difficulties in human relations, 35 % as having distinct difficulties in human relations, 9 % as neurotic, and 5 % as borderline, psychotic, or as possessing severe character disorders.

Comparison of the above with corresponding figures of other surveys is questionable. As it is, the results of two evaluators are never fully commensurable. Rough comparison will nevertheless be attempted.

The percentages obtained closely parallel the American results of the 1950's (cf. p. 78). They are also similar to the results of the Finnish student surveys (Alanen et al. 1968; Holmström 1972). Differences exist, however, in the proportions of neurotic and mildly disturbed subjects (cf. Table 12). There are fewer neurotics but more mildly disturbed individuals in this study than in the student surveys.

Table 12. Norms in Finnish studies of mental health

Variable	Alanen et al. (1968) %	Holmström (1972, 69) %	Väisänen (1975) %	Theacher group A (1980) of present study %
1. Healthy	14.9	13.5–16.4	33.7	17.0
2. Mildly disturbed	62.0	46.0–62.0	37.9	69.0
3. Neurosis	20.1	20.1–35.6	18.7	9.0
4. Severe disorders	3.0	1.9–4.9	9.7	5.0

In the mental health survey of Väisänen (1975, 42; cf. p. 138), which represents the entire population, the percentage of healthy subjects is greater but also the percentages obtained of disturbances exceed the present ones markedly in all the classes. The latter difference is rendered comprehensible by the fact that the present subjects are all active in occupational life and thus constitute a selected sample. The former difference is more difficult to interpret. It may be that Väisänen has applied different criteria to the evaluation of mental health compared with the ones used in this study; the other possibility is that teachers have more problems in human relations than people on the average.

Here, 44 % were classified as physically healthy, 44 % as having mild or temporary symptoms, and 12 % as chronically ill.

Parallels cannot be drawn between the present estimates of psychic and physical health and those of Mäkinen (1980/144; cf. pp.79-81). His results are based on self-reports of teachers concerning their health. His classification of the responses also deviates too much from the classification of this study to allow comparison. The conclusions made by Mäkinen, on one hand, and the author, on the other, of the health of teachers nevertheless coincide in all relevant respects.

9.1.6. The demographic variables (nr. 3018-3019, 3023-3026, means and deviations in Tables 9 and 13)

For demographic variables, group A of teachers has already been compared with the teachers studied by Koskenniemi and Mäkinen (cf. pp. 101-102). Differences between the teacher groups prove to be small in the variables of age, marital status, length of teaching career, and number of changes of school. Of the present teacher group, a greater proportion than in the study of Mäkinen are men and live on the countryside.

Table 13. Demographic and other regressors: means and deviations

Variable		Group A (1980) (N=76)		Group B2	
		$\bar{x}$	s	$\bar{x}$	s
3018	Mar.status	1.8	0.4		
3019	Child.	2.1	1.2		
3023	Yrs.teac.	17.8	4.5		
3024	Size sch.	2.8	1.4		
3025	Loc.sch.	2.8	1.4		
3026	N sch.	3.7	1.7		
3027	Life ch.	14.0	8.3		
3086	Psyc.stud.	3.2	3.6	2.8	1.4
3087	Ex.	1.7	0.9		
3089	Stage	2.2	1.3		
3091	Sch.cert.	7.8	0.5		
3093	Obl.mat.ex.	7.3	1.6		
3094	Comp.	1.9	0.7		
3095	Teac.dipl.	8.5	0.5		
3096	Teac.abil.	8.3	0.3		

9.2. Sex-related correlations among the teachers surveyed

Statistically significant correlations with the sex variable in the total group and in group A appear in Table 14. The results correspond to earlier studies. I.a., Jussila (1976; cf. p. 90) states that women have better academic qualifications than men at the time of application for teacher training. This is also the case here. Women also achieve better in teacher training and participate more readily than men in post-experience studies. Among the middle-aged teachers, the women are more healthy physically than the men (variables 3086-3096). Women are also more content in their profession than men (nr. 3020, 3021; cf. p. 82).

The sex-related differences of personality found here parallel those described by Coan (1974, 173-179; cf. pp. 89-90) and Jussila (1976; cf. p. 90). The results of personality variables in Table 14 can be interpreted as suggesting that men are more materialistic, analytic and realistic in their reasoning (nr. 3006, 3031, 3053, 3055) than women, who are more affective, open, extratensive, and religious than men (nr. 3035, 3052, 3038, 3007, 3003).

The sex-related differences measured with the Rorschach test have diminished between 1958 and 1980 (cf. Table 14). No straightforward interpretation can be given of this change. The sex-related differences may have decreased because of cultural changes, because of one-directional maturation over the years, or because of the teaching profession. The tasks and the social status of male and female teachers are quite similar and equal. These factors may have a homogenizing effect with time.

The above differences between the men and the women are statistically significant. The effects of sex are nevertheless treated as a continuity in this study. Although the results of men and women are not processed separately, the sex variable is included in the analyses to allow observation of the influence of sex.

Table 14. Correlations with sex (women - men)

Variable	r	>p (one-tailed test)
Total group; N=163		
3006 Biol.et.	-.19	.025
3007 REL	.21	.01
3031 $\bar{x}$ (W-P)	.20	.01
3035 $\bar{\bar{x}}$ C	.14	.05
3038 EA	.16	.05
3048 ΣO+	.17	.05
3053 Intell.	.22	.01
3055 Proj.	.15	.05
Group A; N=76		
3003 Psyc.und.	.20	.05
3005 Psyc.biol.et.	.28	.01
3006 Biol.et.	-.32	.005
3013 SOC	.33	.005
3020 Job sat. I	.39	.005
3022 Job sat. II	.19	.05
3018 Mar.status	-.25	.025
3019 Child.	-.35	.005
3024 Size sch.	.20	.05
3025 Loc.sch.	.19	.05
3086 Psyc.stud.	.19	.05
3087 Ex.	.19	.05
3090 Phys.hlth	.20	.05
3091 Sch.cert.	.52	.005
3092 Mat.ex.	.53	.005
3094 Comp.	.31	.005
3095 Teac.dipl.	.31	.005
3096 Teac.abil.	.39	.005
Rorschach test variables		
(1980; N=76)		
3045 A%	-.21	.05
3052 Rep.	-.23	.025
3055 Proj.	.21	.05
(1958; N=93)		
3035 $\bar{\bar{x}}$ C	.24	.01
3037 ET	-.26	.01
3040 Form.-Qual.	-.34	.005
3041 GL	-.18	.05
3042 H%	-.24	.01
3044 $\bar{\bar{x}}$ PD	-.17	.05
3052 Rep.	-.25	.025
(1980-1958; N=76)		
3037 ET	.19	.05
3040 Form.-Qual.	.27	.01
3052 Rep.	.24	.025

9.3. A brief characterization of the teachers surveyed

The surveyed teachers put more emphasis than the controlsubjects on the religious and moralistic and the psychological and social explanations of the etiology of mental health. They are also more psychologically understanding in their attitudes. Mainly they apply biological models to the explanation of the etiology of health.

The Rorschach test results of this survey are interpreted to mean that teachers are more interested in human relations and social acceptability than the population in general. They are mature in their perceptual reasoning, they are cognitively oriented, and they give less expression to their affects than the population average.

The self-reports of the teachers do not bring to light any excess of psychic, physical, or social disturbance. Their expressed self-esteem can be considered fairly high. Most of the teachers possess a religious conviction. The author´s estimate of severe psychic disturbances among the teachers placed them below the population average but on the same level with the teachers of the aforementioned earlier surveys.

The job satisfaction expressed by the teachers is better than, e.g., that of the frontier guards and of the same level as that found in other corresponding teacher surveys.

The sex-related differences among the teachers parallel those of earlier surveys. The women are academically better qualified than men on application for teacher training, they achieve better in teacher studies, and participate more readily in postexperience training. Women also express more contentment with their occupation as teachers than men do. The better physical health of the women in middle-age is almost statistically significant. There are no differences between the sexes in the subjects´self-reports and the author´s evaluations of the mental health of the teachers.

The Rorschach variables point to men's reasoning as being more concrete, analytic, and realistic than that of the women who, for women who, for their part, are more comprehensive, extratensive, affective, and religious than the men.

On the basis of the demographic variables, group A can be considered to represent fairly well the Finnish comprehensive school teachers. The most relevant differences are the facts that the surveyed teachers work relatively more often in rural districts and that men are overrepresented in the group surveyed. It is also known that their basic education exceeds the average for the profession. It has not been possible to investigate the representativeness of all the aspects of personality surveyed. In spite of this fact, group A can be considered a good sample of Finnish teachers and the results obtained for it may carry more general significance as well. When observed as a whole, the obtained results can be seen to correspond quite closely to the teacher image formed on the basis of earlier studies (cf. pp. 91-92).

10. REFLECTION OF CULTURAL CHANGES AS DIFFERENCES IN THE MENTAL HEALTH, THE PERCEPTIONS OF HEALTH, AND THE PERCEPTIONS OF MENTAL HEALTH OF TEACHERS IN GROUP A AND IN GROUP B (PROBLEM 1)

10.1. Differences in perceptions of health and mental health

In this survey, the reflection of differences of perception of man in the perceptions of health and mental health are studied with surveys of the mental health attitudes and the associated etiological explanations, the etiological explanations of health, and the religious convictions of the subject groups: variables 3000-3007. (The means and deviations of these appear in Table 9 and the statistically significant differences in Table 15. Group B was tested on two occasions: B1 1978 and B2 1980).

The first question is, is there a difference between the teacher groups in their perception of man or their perception of health and mental health? In the variables of religiousness (nr. 3007) and religious and moralistic etiological explanation (nr. 3000) no statistically significant differences appear. In the attitudinal variables, the only statistically significant difference (B1: $p<.001$; B2: $p<.05$) is found in the variable of psychological understanding (nr. 3003). The middle-aged teachers have a more psychologically understanding attitude toward disturbances of mental health than the advanced teacher trainees. They apply the psycho-biological model to the explanation of the etiology of health more often than do the advanced teacher trainees (nr. 3005, statistical significance B1: $p<.01$; B2: $p<.001$) who again more frequently use the psychological model of explanation (nr. 3004, B1: $p<.01$; B 2: $p<.001$).

According to Peltonen's thinking (cf. pp. 17-18) one could assume the perceptions of health and mental health of the advanced teacher trainees to be more materialistic and societal than those of the middle-age teachers, but such differences are not demonstrable in this study. Both groups primarily apply a biological model to the explanation of the etiology of health (nr. 3006); likewise both put more emphasis on the psycho-social explanations of the etiology of health than on the religious and moralistic ones. It follows that, in these respects, both groups adhere to a psychological, societal, and materialistic, i.e., pluralistic, perception of man.

As concluded in the theoretical section (cf. pp. 13-18, 27-30, 33), no single conception of man was predominant in our country in 1950-1980, and the changes that have taken place have not been unidirectional. It is apparent from the present results that also the teachers' perception of health and mental health displays a similar pluralism. It is true though that the possible changes that may have taken place in the thinking of teacher group A between the years 1958 and 1980 remain uncontrolled in this survey.

The conclusion that a psychological understanding of mental disturbance is more frequent among middle-aged teachers than with advanced teacher trainees is in agreement with the results of Brown (cf. pp. 65-66). Whether this difference derives from cultural developments, from the maturation of the teachers with time, or from some other factor, cannot be settled with certainty in this context. That maturation does take place with time and training seems apparent. This notion gains support from the diminution of the differences between groups A and B with further training of group B (cf. Table 15, B1 and B2). This problem will be returned to later on (cf. p. 176).

Table 15. Statistically significant differences between group A and group B

Variable	A1 - B 1 (1980) CR	(1978) p<	A1 - B2 (1980) CR	(1980) p<	A2 - B1 (1958) CR	(1978) p<
3002 Soc.res.			2.7	.01	—	—
3003 Psyc.und.	4.4	.001	2.3	.05	—	–
3004 Psyc.et.	-3.0	.01	-9.0	.001	—	–
3005 Psyc.biol.et.	3.2	.01	17.0	.001	—	—
3011 D	2.0	.05	—	-		
3012 Sc	-3.2	.01	—	-		
3015 ES	3.0	.01	–	-		
3030 T/R	10.0	.001	–	-	2.9	.01
3031 x̃ (W-P)	-3.0	.01	–	–	-5.0	.001
3034 F%			-	-	2.5	.05
3036 FC:(CF+C)	1.9	.05	-	-		
3037 ET	3.0	.01	—	—		
3045 A%	3.5	.001	–	–	7.2	.001
3046 P%			–	–	-2.0	.05
3047 RI	2.0	.05	-	–		
3049 Σ AT	-1.6		–	-	-2.0	.05
3050 Σ Agg	-2.1	.05	–	-	-7.7	.001
3051 Adapt.reg.	-2.2	.05	-	–	-2.7	.01
3052 Rep.	-19.0	.001	–	-		
3053 Intell.	-3.1	.01	-	-	-2.6	.01
3054 Reg.	-1.6		–	-	-1.6	
3056 Narc.	-1.9	.05	-	-	-3.1	.01

Note: - = not tested

The differences between the tests of group A in 1958 and 1980 (A1 - A2) are statistically non-significant. The highest values in Student's test were obtained for the following:

Variable 3030 T/R $t = -.7$ $p<.5$
Variable 3052 Rep. $t = -.8$ $p<.5$
Variable 3056 Narc. $t = .7$ $p<.5$

The differences between the tests of group B in 1978 and 1980 (B1 - B2) are statistically non-significant. Here the differences are even less than above.

10.2. Differences in the factors of mental health, especially in those aspects of personality that have become emphasized along with the school reform

All statistically significant differences between groups A and B are presented in Table 15. From group A there are two Rorschach test results: 1958 (A2) and 1980 (A1) (means and deviations in Table 10). The age of group A in 1958 was almost identical with that of group B in 1978. There is thus a possibility of observing the effects of maturation with age and of the cultural change.

It was reported in Chapter 7.1.3. (cf. p. 110) that the items of the variable of religious and moralistic etiological explanation (nr. 3000) and those of social restriction (nr. 3002) have in earlier studies been interpreted as measuring authoritarianism. Group A scores higher than B2 (1980) in both variables; in the case of social restriction the result is statistically significant ($p<.01$). Thus it can be assumed that the teachers in group A possess more authoritarian attitudes than the advanced teacher trainees.

As has been shown before (cf. p. 121) the FAM variables intercorrelate, therefore there is no sense in observing the differences of variables separately. So hereafter we shall be observing all the statistically significant differences between group A and group B together.

Group A has statistically higher values in the variables D (nr. 3011, $p<.05$) and ES (nr. 3015, $p<.01$) than group B, which on the other hand has higher values in variable Sc (nr. 3012, $p<.01$). Interpretation of these results can be, that group A express more self-esteem, but also self-criticism and sense of reality, Group B again more social alienation, but also the elements of creativity.

In the Rorschach test the most important, statistically significant differences are in the variables of the reaction time (nr. 3030: A1-B1, $p<.001$; A2-B1, $p<.01$), perception type (nr. 3031: B1-A1, $p<.01$; B1-A2, $p<.001$), experience type (nr. 3037: A1-B1, $p<.01$), animal responses (nr. 3045: A1-B1 and A2-B1, $p<.001$), responses of aggressive content (nr. 3050: B1-A1, $p<.05$; B1-A2, p<.001), adaptive regression (nr. 3051: B1-A1, p<.05; B1-A2, p<.01), defensive reactions (nr. 3052: B1-A1, p<.001; nr. 3053: B1-A1 and B1-A2, p<.01) and narcissism (nr. 3056: B1-A1, p<.05; B1-A2, p<.01).

Thus the average reactions of group A are slower, perception field narrower, experience type more introversive, responses more concrete but also more realistic than of group B.

Group B has more aggressive contents in responses, more elements of creativity, but also defensive and narcissistic reactions.

Whether or not these results correspondence with that perception of man, which has been goal of the school reform (cf. p. 95), is a difficult interpretation problem. There are results which can be interpreted as differences in the elements of democratism, sociality, independence, creativeness, and mental health, but some of them (especially the elements of sociality and mental health) conflict with the goals. These interpretation problem shall be discussed later (cf. pp. 211-212).

As presented earlier (cf. pp. 125-126) in chapters 10.1-10.2 observed variables measure different structures of personality and some of them intercorrelate, and thus the observed differences can result from some common factor or phenomenon, which appears in the different structures of personality. For clarification of these points multiple discriminant analysis of group A and group B was performed. The 1980 test results of group A were utilized in order to render the differences more extensively observable.

10.3. Multiple discriminant analysis of group A and group B

Variables for the discriminant analysis were selected on the basis of the differences presented in Table 15 allowing for the separate analysis of differences in each of the various dimensions of personality. Some interpretationally interesting variables, i.a., of ego-identity, were also included in the analysis. The model programmed at the Computing Center of the University of Helsinki limited the number of variables to nineteen.

The selected FAM variables represent the dimensions of psychosis and acting-out, neurosis, and defensiveness. The variables picked from among the Rorschach test variables fall within the dimensions of creativity and relatedness in the classification of Coan. Of interpretationally similar variables, only one was selected in the analysis. The following variables were selected in the discriminant analysis:

3003 Psyc.und.
3004 Psyc.et.
3005 Psyc.biol.et.
3008 ?
3012 Sc
3013 SOC
3014 HOS
3015 ES
3017 Sex
3030 T/R

3031 $\bar{x}$ (W-P)
3037 ET
3043 $\bar{\bar{x}}$ (A-S)
3044 x PD
3047 RI
3050 Σ Agg.
3051 Adapt.reg.
3052 Rep.
3056 Narc.

Table 16. Multiple discriminant analysis of groups A and B

Variable	Mean Group A (N=76)	 Group B (N=84)	Equality of Means Wilks' Lambda	 F	 Add. F	Risk >p	r[x]
3030 T/R	36.8	19.9	.5524	128.0	8.0	.001	-.79
3031 $\bar{x}$ (W-P)	21.9	25.3	.4620	91.4	5.7	.001	.45
3008 ?	5.1	9.7	.4221	71.2	4.8	.001	.30
3056 Narc.	4.3	5.7	.3860	61.6	3.9	.001	.31
5052 Rep.	4.1	6.0	.3583	55.1	3.1	.001	.29
3051 Adapt.reg.	19.1	26.4	.3306	51.6	2.3	.01	.36
3017 Sex	1.5	1.7	.3163	46.9	1.9	.05	.22
3003 Psyc.und.	25.1	22.9	.3025	43.5	1.4	.25	-.37
3004 Psyc.et.	4.2	4.8	.2880	41.2	0.8	-	.15

[x] r = correlations between discriminating functions and variables
Eigenvalues 2.472, X^2 192.3, NDF 9, Canonical correlations .8438

Discriminating function coefficients:

Variable	$\bar{x}$	St. $\bar{x}$
3003 Psyc.und.	.08356	-.29
3004 Psyc.et.	.1065	.27
3008 ?	.04057	.36
3017 Sex	.5767	.28
3030 T/R	-.1026	-.97
3031 $\bar{x}$ (W-P)	.04631	.19
3051 Adapt.reg.	.03858	.45
3052 Rep.	.1229	.46
3056 Narc.	.1285	.33

Classification of observations:

Percentage of diagonal observations: 93.1

		To	
		1.0	2.0
From	1.0	68	8
	2.0	3	81

The groups are distinguished in the discriminant function (Table 16). A nine-variable discriminant function classifies the teachers into groups with an accuracy of 93.1 %. The best discriminating variables include reaction time (nr. 3030), perception type (nr. 3031), narcissism (nr. 3056) and, of the defenses: rejection (nr. 3008) and repression (nr. 3052). Also adaptive regression (nr. 3051) constitutes a statistically significant discriminant variable while the female sex (nr. 3017) is almost significant. In all of these variables, group B scores higher than group A.

The discriminant analysis introduces little new information not already discernible in the variablewise description of the differences between A and B, but it does clarify the nature and the relationships of the differences between the two groups. The organization of the aspects of personality in the two groups thus gains further elucidation.

The role of cultural changes as explainers of the differences between group A and group B is not clear. The cultural and maturation influences seem to be intertwined in the results. The effect of maturation with age has been eliminated as far as possible in the treatment of the results. And, e.g., the observed increase in the speed of reaction and in narcissism must be considered a cultural effect, especially since a similar change is observable in the reactions of group A between 1958 and 1980; the latter development can hardly be connected to the age factor.

There are three separate routes by which the cultural chánges can have affected the variables. It is impossible to examine here the part played by each of these.

First of all, the overall behavior of people has changed with the change in culture. Some changes in the results of teacher group A point in this direction. Secondly, the valuation of teacher training may have been different in the 1950's than in the 1970's which may have effected the recruitment of individuals of different personality at different times. As it is, the students are always selected for teacher training, according to certain criteria (cf. pp. 86-89), from among the group of applicants available at the time. Not enough is known about the changes that have occurred between 1958 and 1977 in the recruitment of students into teacher training. Thirdly, the method of selection applied by the teacher training institution has changed during the period of observation (cf. pp. 105-106) which is also ascribable to cultural change. The conception of the attributes of the good teacher has changed (cf.pp. 69-72; 91-92).

On applying for teacher training, group A had to pass a selection consisting of a performance test and an interview with the principal, whereas the selection of group B comprised a teaching episode and an interview with a group of evaluators. It is apparent that the different selection situations favored different aspects of personality. The latter form of selection may be more favorable to individuals with a fast and comprehensive, even though somewhat impulsive, mode of reaction. The briefness of the selection situation apparently precludes the full detection of the personal problems of the applicants.

The obtained results show, that the teachers in group A and group B have some differences in personality variables, which are moving in the same direction as the goals of school reform, but there are also some conflicting. The variables can not be interpreted the same as the school reform's personality abstractions, but they can seen as elements of them.

No clearcut culture-bound differences can be demonstrated in the perceptions of health and mental health held by the teachers. Here the existing differences are sooner explainable as effects of individual maturation.

11. ASSOCIATION OF THE TEACHERS´ PERCEPTIONS OF MENTAL HEALTH AND THE CHANGES IN THESE WITH THEIR MENTAL HEALTH, EDUCATION, AND SOME DEMOGRAPHIC VARIABLES: AN ANALYSIS OF CORRELATIONS (PROBLEM 2)

The correspondence of perceptions of mental health to the determinants of the mental health of teachers will also be treated in the following chapters along with the dimensional model of personality. But as the perceptions of mental health and other cognitive attitudes do not constitute the most essential elements of personality (cf. pp. 50-54, 95-97) their relationship to other factors is not readily analyzable within the dimensional model. The position of mental health attitudes in the dimensions of personality can be examined in that context. But since an analysis of the perceptions of mental health is a central theme in this survey, an investigation was undertaken of the correlations between these perceptions and mental health, education, and demographic variables. Here the etiological explanations of health (nr. 3004-3006) are not treated separately because they have very high intercorrelation (cf. p. 111) and because they can be analyzed along with the treatment of the dimensional model. The statistically significant correlations of these variables appear in Appendix 25. In the following, the statistically significant and essential correlations with the attitude variables (nr. 3000-3003) will be treated separately (Table 17).

11.1. Associations of the religious and moralistic explanations of the etiology of mental health (nr. 3000)

It is evident that the religious and moralistic etiological explanations correlate significantly (p<.01) with the variable of religiousness (nr. 3007) and they can be expected to fall within the dimension of transcendence in Coan´s model. In the total subject group, the statistically near-significant (p<.05) correlations are with variables which express defensiveness (nr. 3009) and narrowness of experience (nr. 3034, 3038).

In group A, the statistically significant negative correlations include the examinations taken (nr. 3087), size of school (nr. 3024), and location of school (nr. 3025) and there is near-significant correlation with popular responses in the Rorschach test (nr. 3046). These results indicate that the religious and moralistic explanations of the mental health etiology can have a communal function in the way described by Allardt in his model of mechanical solidarity (cf. p. 53 and hypothesis C, p. 97), but that they are not associated with professional solidarity and activity.

There are some statistically near-significant correlations between the 1958 Rorschach responses (group A: nr. 3037, 3042) and the religious and moralistic explanations of mental health etiology. This indicates that these attitudes may be associated with the basic structure of personality. This interpretation is further validated by the statistically significant and very high re-test correlation of this variable in group B (cf. Table 18).

The association of training with differences in attitudes was measured in group B with an analysis of differences in attitudes found between the survey proper in 1978 and the re-testing in 1980 as well as with an elucidation of the correlation of these differences with voluntary studies in psychology and with academic examinations taken (nr. 3086, 3087); in group A, the corresponding analysis consisted of elucidation of the correlation of attitudes with academic examinations taken and with psychology studies.

The religious and moralistic explanation of mental health etiology lessens when associated with training in group B, though not significantly (cf. Tables 9 and 15). In group A, there is statistically significant negative correlation with academic examinations taken (nr. 3087) and the direction is the same with psychology studies (nr. 3086) but this correlation is not significant. Hence, training has a negative correspondence to the religious and moralistic attitudes (cf. hypothesis A, p. 97).

Table 17. Statistically significant correlations of mental health attitudes and etiological explanations with other variables

Total group; N=163			Group A; N=76		
Variable	r	p<*	Variable	r	p<*
Variable 3000: religious and moralistic etiological explanations					
3007 REL	.49	.01	3007 REL	.32	.01
3009 L	.19	.05	3046 P% (1980)	-.22	.05
3034 P%	.18	.05	3037 ET (1958)	.24	.05
3038 EA	-.15	.05	3042 H% (1958)	.26	.02
			3087 Ex.	-.25	.02
			3023 Yrs.teac.	.21	.05
			3024 Size sch.	-.31	.01
			3025 Loc.sch.	-.31	.01
Variable 3001: psychological and social etiological explanations					
3029 R	.21	.01	3009 L	-.26	.02
3038 EA	.19	.05	3014 HOS	.28	.02
3046 P%	-.18	.05	3015 ES	-.27	.02
3053 Intell.	.17	.05	3020 Job sat. I	.21	.05
3054 Reg.	.16	.05	3038 EA (1980)	.23	.05
3055 Proj.	.20	.02			
Variable 3002: attitudes of social restriction					
3008 ?	.15	.05	3012 Sc	.26	.02
3014 HOS	.33	.01	3013 SOC	.25	.02
3015 ES	-.19	.05	3014 HOS	.41	.01
3039 $\bar{x}$ K+k etc.	-.17	.05	3015 ES	-.22	.05
3047 RI	-.17	.05	3021 Job sat. III	-.33	.01
			3022 Job sat. II	-.29	.01
			3031 $\bar{x}$ (W-P) (1980)	-.23	.05
			3039 $\bar{x}$ K+k etc. (1980)	-.25	.05
			3052 Rep. (1980)	-.21	.05
			3055 Proj. (1980)	.26	.02
			3023 Yrs.teac.	.21	.05
			3034 P% (1958)	-.21	.05
Variable 3003: attitudes of psychological understanding					
3007 REL	.19	.05	3012 Sc	.21	.05
3013 SOC	.19	.05	3013 SOC	.23	.05
3016 Age	.24	.01	3015 ES	-.28	.02
3030 T/R	.21	.01	3016 Age	-.22	.05
3052 Rep.	-.25	.01	3017 Sex	.21	.05
			3054 Reg. (1980)	.27	.02
			3055 Proj. (1980)	.21	.05
			3090 Phys.hlth	.21	.05
			3087 Ex.	.21	.05
			3091 Sch.cert.	.25	.02
			3093 Obl.mat.ex.	.27	.02
			3095 Teac.dipl.	.23	.05

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* two-tailed test

Table 18. Correlations between the group B test results of 1978 and 1980 in different variables of mental health attitudes and etiological explanations; N=59

Variable	r	p<*
3000 Rel.mor.et.	.60	.005
3001 Psyc.soc.et.	.24	.05
3002 Soc.res.	.33	.005
3003 Psyc.und.	.07	-
3004 Psyc.et.	.10	-
3005 Psyc.biol.et.	.05	-
3006 Biol.et.	.32	.01

* one-tailed test

According to the results above, the religious and moralistic etiological explanations can be interpreted, on one hand, as expressions of the values of the ego and of the self and, on the other, as defensive elements in the energetics of personality.

11.2. Associations of the psychological and social explanations of mental health etiology (nr. 3001)

There is, both with the entire teacher group and with group A, statistically significant and near-significant correlations between the psychological and social explanations of mental health etiology and the variables which express productivity (total subject group: nr. 3029, 3038, 3046; group A: nr. 3009, 3038). The correlations found with the Rorschach test defense variables (nr. 3053, 3054, 3055) and the negative self-reports of FAM (A: nr. 3014, 3015) are difficult to interpret in this context. It is possible that teachers who apply the psychological and social etiological explanations are more conscious than others of the negative aspects of their personality, these including low self-esteem and feelings of hostility, and also dare to express these; therefore they may also be able to psychologically understand the problems of other people. This interpretation is a speculative one and it cannot be confirmed here. The results do show contradictions as these same teachers appear satisfied with their job (nr. 3020). It has already been mentioned in the theoretical section that the interpretation of the ES scale is not clear (cf. p. 121).

This problem will be analyzed more exactly later on (cf. pp. 187-189).

In group B, the re-test correlation of the psychological and social explanations of mental health etiology is low but statistically near-significant (cf. Table 18). In group A, there are no significant correlations with the Rorschach test results of 1958 and of the demographic variables. Training seems not to affect these attitudes. There are no statistically significant correlations with studies of psychology nor with academic examinations taken (nr. 3086, 3087). There are no statistically significant differences in the results of group B between 1980 and 1978 (cf. Table 9).

The psychological and social etiological explanations of mental health can be interpreted as adaptive expressions of the ego and the self. These are assumed to fall within the dimension of efficience in Coan´s model.

11.3. The attitudes of social restriction (nr. 3002)

The attitudes of social restriction are statistically significantly or near-significantly correlated with variables which are usually interpreted as expressing negative self-conception and weakness of the functions of the ego (total subject group: nr. 3008, 3014, 3015, 3039, 3047; group A: nr. 3012, 3013, 3014, 3015, 3039, 3052, 3055). With group A, these attitudes show in addition statistically significant negative correlation with valuation of the job and its human relations (nr. 3021, 3022).

The variable acquires a highly significant re-test correlation in group B (cf. Table 18). These attitudes are thus rooted in the more fundamental structures of personality. This interpretation is also supported by the statistically significant correlation with the Rorschach variable of 1958 (group A; nr. 3034). This correlation is difficult to interpret in this context. It will be returned to later on (cf. Chapter 14.3. p. 195).

Training has no significant association with on these attitudes. With group B, there is slight diminution in the social restriction variable in the period 1978-1980 but the difference is not statistically significant (cf. Table 9). No significant correlations exist with psychology or other academic studies (nr. 3086, 3087).

The attitudes of social restriction are interpreted here as being protective of a weak ego and a weak self-conception. They thus act as derivatives of defenses. In Coan's dimensional model, these attitudes are assumed to fall within the dimension of inner harmony or to constitute a separate dimension of cognitive self.

11.4. The attitudes of psychological understanding (nr. 3003)

It already became clear in connection with the examination of the differences between group A and group B in Chapter 14 that attitudes of psychological understanding are more common with the middle-aged teachers than with the advanced teacher trainees; in group A alone though, the older teachers are not as understanding as the younger ones (cf. Table 17 group A). It was mentioned in the theoretical section (cf. pp. 50-53) that same attitudes can have different functions in different situations and in different groups.

The interpretation of the functions of the attitudes of psychological understanding presents the same problems as the interpretation of the psychological and social explanations of mental health etiology. Correlations exist with variables which are usually interpreted as expressing weak self-esteem and weakness of the functions of the ego (nr. 3012, 3013, 3015, 3052, 3054, 3055). This indicates that teachers who have a strong self-esteem and no defensive reactions may not be as empathetic as others. This interpretation can not be confirmed in this study.

Psychological understanding is associated statistically near-significantly with cognitive ability and activity: with good academic achievement and extra studies (group A: nr. 3087, 3091, 3095; group B: nr. 3086, r=.22, p<.05, N=59). Attitudes of psychological understanding can be considered expressions of the values of the ego and the self; their role is an adaptive one.

These attitudes have important correlations with training and the physical and cognitive abilities of the individual, but they are not associated with demographic variables other than age. The attitudes of psychological understanding appear to fall within the dimension of Coan's inner harmony or within the dimension of cognitive self.

The religious and moralistic etiological explanations and the attitudes of social restriction proved the most stable of the attitudinal variables of this survey (cf. Table 18). They also displayed some important associations with the 1958 test variables in group A. They can thus be considered to belong to the more fundamental structures of personality. Psychological attitudes (nr. 3001, 3003) cannot be shown to have the same stability.

It was proposed in the theoretical section that every attitude has a significant function in the energetics of personality (cf. pp. 50-53). Some of these have been described above. The religious and moralistic etiological explanations and psychological understanding have been shown to express values of the ego and self; the psychological and social explanations of mental health etiology (nr. 3001) and the attitudes of psychological understanding have been conceived as adaptive expressions of the ego and the self; and the religious and moralistic etiological explanations and especially the attitudes of social restriction have been described as defensive, providing protection for a weak self and ego.

Here mental health attitudes have been approached from psychodynamic, educational, and communal angles. The hypotheses presented (cf. pp. 96-97) have in the main been confirmed.

Hypothesis A: Training is associated with lessening of the teachers' authoritarianism. Hereinbefore the interpretation was put forward that the variables 3000 and 3002 also measure authoritative attitudes (cf. p. 110). With group B, authoritarianism of the teachers can be seen to lessen with training (cf. Table 9, B1 and B2), but the results are not statistically significant. In group A, training has a statistically significant negative correlation with religious and moralistic attitudes. In the attitudes of social restriction training has a similar direction, but there are no statistically significant correlations. Training is thus associated in the direction of the hypothesis but statistical confirmation of this is provided only in one attitudinal variable.

Hypothesis B: Training is associated with the psychological understanding of teachers. There is in both groups a statistically significant correlation, confirming the hypothesis.

Hypothesis C: The attitudes toward mental health held by teachers of rural village schools are more religious and moralistic than those of other teachers. This hypothesis has been confirmed statistically (cf. p. 164).

The obtained results show that the correlations between attitudes and the other variables are not fully congruent in group A and in the total subject group. This can be considered as confirmation of the earlier presented notion (cf. pp. 50-53) that an attitude can have different functions in different social groups and in different stages of life, e.g., with teachers of different ages.

The ensuing chapters will be devoted to an elucidation of the classifying and structuring functions of attitudes and their positions in the dimensional model of personality.

12. THE DIMENSIONAL MODEL OF THE MENTAL HEALTH OF TEACHERS AND LOCATION THEREIN OF THE PERCEPTIONS OF MENTAL HEALTH AND THEIR ETIOLOGICAL EXPLANATIONS (PROBLEM 4)

12.1. Factor analysis of the personality variables of the total subject group (A+B)

The 45 variables selected in this analysis (cf. Appendix 26) have been shown in earlier studies to assess the basic dimensions of personality (cf. pp. 119-122, 125-126, 130-134). The factor analysis employed the principal axis model and the varimax rotation. On the basis of statistical and interpretational data, a six-factor solution was adopted. The eigenvalues obtained would have justified the inclusion of at least two more factors as the eighth still acquired an eigenvalue above one. The guiding principle here, however, has been that each adopted factor should explain 5 % or more of the total variance (in the varimax solution). The last factor of the six-factor solution explains 4.8 % of the total variance.

The fact that the greatest decrease in eigenvalue occurs between the fourth and fifth factor, when they still score over two, precluded the utilization of Cattell's scree-test in the selection of the factors.

The six-factor solution explains 40 % of the total variance and 79 % of the estimated sum of communalities. The percentages of explained variance obtained are somewhat low but still satisfactory. As it is, the subject group is quite heterogenous in age and also in some aspects of personality as judged by the comparatively large deviations in the latter (cf. pp. 143-146). The technical differences in the applied methods also add to the variance within the methods and diminish the variance between the methods.

The six-factor solution fulfils the criteria of the simple solution in every detail: The factor matrix contains at least one zero loading on each line. Each of the columns of the matrix shows a minimum of four zero loadings. The factor columns have several variables with low loadings in one column of a column pair and high loadings in the other. Hardly any variables are found that acquire high loading in both columns of a pair. (Cooley & Lohnes 1962, 160-163; Sänkiaho 1974, 15-16)

The correlation matrix, the communalities, the eigenvalues, the factor loadings, and the varimax solution appear in Appendices 26-28.

The following variables acquire high loading with the first factor:

Variable	Loading	h^2
3029 R	.87	.80
3038 EA	.73	.68
3055 Proj.	.68	.52
3032 ΣS	.57	.34
3056 Narc.	.57	.51
3046 P%	-.66	.55

Since primarily the Rorschach test variables become loaded with the factor, it is named the dimension of productivity in accordance with previous surveys (cf. pp. 125, 134). It corresponds closely to the factor obtained, e.g., in the frontier guard survey (Nieminen 1980a, 78). The contents of the factor brings it close to the dimension of efficiency described by Coan. Within the factor, the popularity of responses (nr. 3046), the slowness of reaction (nr. 3030), and repression (nr. 3052) constitute the opposites of productivity (loadings statistically significant).

As expected (cf. p. 167), the variable of psychological and social explanations of the etiology of mental health (nr. 3001) acquires a statistically significant loading (.28, $p<.01$; the significance has been calculated from the table presented by Child 1970, 99-100) with the factor.

The factor explains 9.3 % and 23 % of the total variance and the explained variance, respectively.

The following variables acquire high loading with the second factor:

Variable	Loading	h^2
3033 $\bar{x}$ m	.71	.60
3042 M%	.70	.52
3037 ET	.67	.63
3041 GL	.62	.56
3049 ΣAT	−.47	.55
3034 F%	−.45	.52

The highest loadings are found in the variables that measure functions of the ego. They are generally known as elements of ego strength or internal control (Viitamäki 1970, 71-72; cf. p. 134). The negative end of the factor contains the following factors of intrapsychic disturbance: anxiety, narrowness of experiences, regression, and repression (nr. 3054, 3052; the loadings are statistically significant: $p<.01$). The factor is named the dimension of inner harmony as its content corresponds to Coan's dimension of this denomination (cf. p. 57).

The variable of psychological etiological explanations (nr. 3004, .25, $p<.01$) has a statistically significant loading with this factor.

The factor explains 7.5 % and 19 % of the total variance and the explained variance, respectively.

The following variables acquire high loading with the third factor:

Variable	Loading	h^2
3040 Form.-Qual.	.70	.60
3045 A%	.51	.34
3047 RI	.47	.28
3037 ET	.37	.63
3035 $\bar{x}$ C	−.62	.49
3031 $\bar{x}$ (W-P)	−.59	.49

The factor is named the dimension of analytical vs. global perception. Its positive end contains variables that display formal, realistic, and objective analysis of the perceptual field and its objects. Its negative end holds variables of a comprehensive and affective mode of reaction. The factor corresponds to the dimension of comprehensive reaction of the frontier guards (Nieminen 1980a, 82) and the factor of global vs. analytic orientation of Coan (1977, 288, nr. 12). It is similar in content to Coan's dimension of relatedness (cf. p. 57). Its content also resembles that described for cognitive style and field independence (cf. p. 70).

Statistically significant loading with the factor is shown by the variable of biological etiological explanations (nr. 3006, .25, $p<.01$) and statistically near-significant negative loading by the variable of psychological etiological explanations (nr. 3005, -.22, $p<.05$). The sex variable also displays a near-significant loading (-.23, $p<.05$). These results, too, are in agreement with the results of Coan (1977, 174-178; cf. pp. 89-90).

The factor explains 6.7 % and 17 % of the total variance and the explained variance, respectively.

The following variables acquire high loading with the fourth factor:

Variable	Loading	h^2
3012 Sc	.78	.64
3011 D	.76	.60
3010 Hs	.60	.39
3013 SOC	.31	.13
3015 ES	-.64	.42

Here the situation is exactly the same as in the survey of frontier guards (Nieminen 1980a, 81). The factor loads almost exclusively the self-reports; this time the test is FAM. The factor is named the dimension of mental disorder. It resembles the factor of physical, psychical and social well-being of Bottenberg et al., only the direction is reversed (cf. p. 117). It can also be called the dimension of cognitive self as most of its important variables consist of self-reports.

Of the other variables, statistically near-significant positive loading with the factor is observed in socially restrictive mental health attitudes (nr. 3002, .22, $p<.05$) and negative loading in the reality index (nr. 3047, -.20, $p<.05$). This result conforms to expectation (cf. p. 167-168).

The factor explains 6 % and 15 % of the total variance and the explained variance, respectively.

The following factors acquire high loading with the fifth factor:

Variable	Loading	h^2
3051 Adapt.reg.	.77	.63
3050 ΣAgg.	.68	.65
3053 Intell.	.50	.54
3054 Reg.	.49	.67
3049 ΣAT	.42	.55
3034 F%	-.40	.52

The above variables are usually considered negative because they include aggressive, regressive, and anxiety-provoking mental images. In this survey, however, the factor includes good cognitive control as well. The negative end of the factor holds the formal responses. The factor could be named the dimension of creativity according to Coan (cf. pp. 56-57). Namely it loads even other determinants of creativity. The factor comprises resources of creativity rather than products thereof, with creativity understood according to Moreno (cf. pp. 56-57) and Holt (cf. pp. 48, 133). The factor is named the dimension of adaptive regression after Holt. An almost identical factor was obtained in the survey of frontier guards (Nieminen 1980a, 75). Mental health attitudes and etiological explanations are not markedly loaded with this factor.

The factor explains 5.6 % and 14 % of the total variance and the explained variance, respectively.

The following variables acquire high loading with the sixth factor:

Variable	Loading	h^2
3016 Age	-.68	.67
3005 Psyc.biol.et.	-.62	.46
3030 T/R	-.55	.39
3003 Psyc.und.	-.31	.13
3006 Biol.et.	.43	.28
3004 Psyc.et	.41	.29

Except for the highest loading, which is in the age variable, the most important loadings are found in the variables of etiological explanations. The name of the factor is derived hereof: dimension of the etiological explanations of health. The psychobiological etiological explanations and psychological understanding appear to be moored in the age variable and the speed of reaction: life experience and deliberation. The young are more uncompromising in their choices which is reflected as unambiguousness of the etiological explanations they adopt. These are also associated with repression and rejection (nr. 3052, .23, p<.05; 3008, .27, p<0.1).

Other statistically significant loadings of the factor show that psychological understanding and the psycho-biological etiological explanations are coupled with psychological and social explanations of the etiology of mental health (3001, -.22, p<0.5) and affective reactions (3035, -.25, p<.01).

The factor explains 4.8 % and 12 % of the total variance and the explained variance, respectively.

12.2. Factor analysis of the personality variables of the total subject group: conclusions

In accordance with assumptions made (cf. p. 98) the factors obtained correspond to the dimensions of efficiency, creativity, inner harmony, and relatedness of Coan's model as well as to cognitive self-conception. Contrariwise, a dimension of transcendence cannot be isolated. The variable of religiousness (nr. 3007), which has been classified as a measure of spirituality, acquires its only statistically near-significant loading (.23, p<.05) with the factor of cognitive self-conception. The religious and moralistic etiological explanations acquire no significant loadings in the analysis. The latter variable was assumed to be located in the dimension of transcendence of Coan (cf. p. 163).

The obtained communalities are quite high throughout, expressing inner consistency of the variables. The only exception is the very low value of the Rorschach test variable of achromatic responses (nr. 3039). Already its mean and deviation showed low values (cf. Table 10) and thus it does not function as a discriminator in this study. The variables of narcissism and defensiveness of the Rorschach test have fairly high communalities and they are also interpretable in a meaningful way. The variables of ego-identity (nr. 3043, 3044) do not operate as expected on the basis of earlier research (Nieminen 1980a; Viitamäki 1970). Apparently the ego-identity of the teachers is indistinct; this may be related to the nature of the job of the teacher. As it is, teachers work constantly with children and young people and may occasionally identify with them which can disturb the adult identity and hamper its development. The problem warrants closer research.

It is somewhat surprising that the FAM variables are loaded here with just one factor. It may be a technical problem but can also be ascribable partly to the poor motivation of the subjects. Especially group B were quite reluctant at FAM testing.

The variables of mental health attitudes and etiological explanations function in the way anticipated in problems 2 and 3 (pp. 96-98). They are not the most essential elements in the dimensional model of personality but rather located in its more peripheral areas as presented, i.a., by Wagner in his structural model (cf. pp. 125-126). Contrarily, the etiological explanations of health appear to be more firmly rooted in personality, its basic modes of orientation, and thus constitute a dimension of their own. Here the results agree with the theories of cognitive styles. The latter are considered to comprise the basic modes of orientation which determine the individual acquirement of knowledge (cf. p. 70).

13. DIMENSIONAL MODEL OF THE MENTAL HEALTH OF TEACHER GROUP A AND MANIFESTATIONS OF CONSCIOUSNESS IN ITS DIMENSIONS (PROBLEMS 5 AND 3)

13.1. Factor analysis of the variables of group A

Group A constitutes the subject group proper of the survey. More information has been gathered concerning it than group B. Therefore this information will also be more thoroughly analyzed, i.e., with a separate factor analysis. Here the variables of the factor analysis of the total subject group are supplemented with three variables associated with the societal role of teachers, i.e., the variables of job satisfaction (nr. 3020-3022), and with the variables of mental (nr. 3028) and physical (nr. 3090) health (49 variables; cf. Appendix 29).

As several variables show smaller deviation with group A than with group B (cf. Tables 9, 10), a more distinct factor analysis was to be expected even if the same basic dimensions were anticipated. More attention can thus be given to the different manifestations of consciousness and the obstacles to conscious activity and the differences and similarities between the functions of the ego and the cognitive self as presented earlier and in hypothesis A (cf. p. 99).

Both statistical and interpretational criteria supported an eight-factor solution. Here the eigenvalues of all the factors exceed one and even the least-explaining factor explains 4.7 % of the total variance.

The eight-factor solution explains 48.7 % and 91.8 % of the total variance and the estimated sum communalities, respectively. These percentages are on the high side though not such as to constitute over-interpretation. The factor solution fulfils all the criteria of a simple structure (cf. pp. 171-172). The correlation matrix, the communalities, the eigenvalues, the factor loadings, the varimax solution, and the factor correlations appear in Appendices 29-31.

The factors do not intercorrelate and their coefficients of reliability[*] are comparatively high. Thus the analysis must be considered successful even in this respect. The coefficients of reliability will be presented below, separately for each factor.

The following variables acquire high loading with the first factor:

Variable	Loading	h^2
3029 R	.84	.75
3053 Intell.	.63	.67
3038 EA	.56	.67
3056 Narc.	.55	.54
3032 ΣS	.53	.42
3055 Proj.	.53	.54

The factor closely resembles the first factor obtained in the factor analysis of the variables of the total subject group and it is hence named the dimension of productivity even here (cf. p. 172). As on the first occasion, its negative end represents the popular responses (nr. 3046) and repression (nr. 3052) (loadings statistically significant). These would thus seem to constitute the worst obstacles to productivity.

None of the variables of mental health attitudes or etiological explanations of health acquire significant loading with the present factor.

The factor explains 7.6 % and 15.5 % of the total variance and the explained variance, respectively. Its coefficients of reliability are I (model L2 M2 E2) .91, II (model L2 M2 E3) .91.

[*] The program for the calculation of the reliability of the factors was developed by L. Tarkkonen of the Computing Center of the University of Helsinki.

The following variables acquire high loading with the second factor:

Variable	Loading	h^2
3037 ET	.80	.71
3042 H%	.78	.67
3041 GL	.66	.67
3033 $\bar{x}$ m	.51	.58
3052 Rep.	-.40	.41
3054 Reg.	-.48	.69

As before, the dimension of inner harmony, or of ego functions, emerges as the second factor (cf. p. 173). Despite slight alterations in the position of some variables in this solution, the factor corresponds closely to the earlier one in its content and percentage of explained variance. Here the introversive type of experience becomes accentuated. As remembered, there was a corresponding difference between group A and group B in experience type (cf. p. 156, Table 15).

Within the dimension, the scales of repression, regression and anxiety (nr. 3039, 3049) form the opposites of inner harmony as before. Significant loading with the factor is also shown by the variables of ego-identity and experience actual (nr. 3043, 3038). This factor thus describes the intrapsychic consciousness pursued by psychoanalysis. Of the variables of mental health attitudes, social restriction (nr. 3002) displays statistically significant loading with the factor (.25, $p<.05$).

The factor explains 7.5 % and 15 % of the total variance and the explained variance, respectively. Its coefficients of reliability are: I .90, II .90.

The following variables acquire high loading with the third factor:

Variable	Loading	h^2
3011 D	.80	.71
3010 Hs	.76	.62
3012 Sc	.61	.65
3014 ΠOS	.36	.54
3028 Ment.hlth	-.63	.55
3015 ES	-.44	.56

The third factor is the dimension of mental disorder. It corresponds closely to the fourth factor of the earlier analysis (cf. p. 174): Their percentages of explained variance and their contents are almost the same, only the order of the variables is slightly different in the two.

The factor could also be called the dimension of cognitive self after the variables at its negative end: Here we find high loading in the estimates of physical and mental health and in the ES scale of the FAM and statistically near-significant loading in some factors of cognitive self-confidence and creativity of the Rorschach test (nr. 3031, 3032, 3041, 3048).

In comparison with the factor analysis of the total subject group, here the depressive and neurotic disturbances are more emphasized in contrast to the prominence of antisociality and acting-out in the earlier analysis. These basically similar differences were already discernible in the means of group A and group B (cf. Table 15, p. 156). The fact that the estimates of physical and mental health and the FAM variables acquire such high loadings and communalities with this factor is a demonstration of the external and internal validity of the variables. The ES scale of the FAM constructed by Barron (cf. pp. 120-121) was intended as a measure of ego strength. Here the scale and some other factors of ego strength do show statistically significant loading. These factors nevertheless clearly deviate from the components of the factor of inner harmony described above. The only variable loaded with both of these factors is the scale of perceptual integration (nr. 3041). The factor corresponds in content to the factors of self-consciousness.

The mental health attitude and etiological explanation variables are not markedly loaded with the factor.

The factor explains 6.4 % and 13 % of the total variance and the explained variance, respectively. Its coefficients of reliability are: I .90, II .90.

The following variables acquire high loading with the _fourth factor_:

Variable	Loading	h^2
3051 Adapt.reg.	.76	.60
3050 Σ Agg.	.65	.57
3033 $\bar{x}$ m	.55	.50
3056 Narc.	.43	.54
3053 Intell.	.42	.67
3034 F%	-.60	.53

Highest loadings with the factor occur within almost the same variables as in the case of the _dimension of adaptive regression_ which emerged as the fifth factor in the analysis of the total subject group (cf. p. 175). At its positive end, high loadings are encountered in factors of creativity and self-confidence (even nr. 3043, 3056) (statistical significance); at its negative end, high loadings are acquired by objectivity and formality (nr. 3034).

Mental health attitudes and etiological explanations are not loaded with the factor in this analysis either. Contrarily, job satisfaction II, or the experienced valuation of the job (nr. 3022), acquires statistically near-significant loading (.25, $p<.05$).

The factor explains 6 % and 12 % of the total variance and the explained variance, respectively. Its coefficients of reliability are: I .90, II .91.

The following variables acquire high loading with the _fifth factor_:

Variable	Loading	h^2
3009 I	.59	.46
3021 Job sat. III	.46	.30
3007 REL	.44	.33
3020 Job sat. I	.42	.47
3014 HOS	-.61	.54
3012 Sc	-.43	.65

This factor was not found in the factor analysis of the total subject group. An appropriate name for it could be the _dimension of social adaptation_. At the positive end of the factor, loading is detected in variables which indicate compliance with the expectations of one's culture and a strive for social acceptability; perhaps these endeavors are at times excessively forceful or defensive by nature (nr. 3009, cf. p. 119). In addition loading occurs in adaptation to one's job, e.g., to its objectives and human relations (all three job satisfaction variables, nr. 3020-3022, cf. p. 137), but at the same time even self-esteem and religiousness (nr. 3015, 3007) become loaded. The negative end includes hostility, social alienation, and acting-out, as well as social restriction (nr. 3002, .37, p<.01) of the mental health attitudes. The loadings of the Rorschach variables are not high but their interpretation agrees with the above. The factor resembles the factor of social confidence and cooperativeness of Bottenberg et al. (cf. p. 117).

The *dimension of social adaptation* comprises variables that depict consciousness of the prevalent values of society. Previously the concept of consciousness of duty was employed in connection with teachers (cf. pp. 64-66; Haavio 1954, 99-108). Parallels can be seen between the present dimension and the societal consciousness of Marxian psychology and corresponding surveys of the teacher personality (cf. pp. 25-27, 74-78). Differences of content exist, which is natural in consideration of the different, Christian, value objectives of our society. This dimension describes *factors of social and societal consciousness*.

The factor explains 5.7 % and 12 % of the total variance and the explained variance, respectively. Its coefficients of reliability are I .89, II .89.

The following variables acquire high loading with the *sixth factor*:

Variable	Loading	h^2
3035 $\bar{x}$ C	.78	.74
3031 $\bar{x}$ (W-P)	.48	.49
3038 EA	.40	.67
3040 Form.-Qual.	-.74	.74
3045 A%	-.65	.55
3034 F%	-.36	.53

This factor is almost identical with the third factor of the analysis of the total group, the dimension of analytical vs. global perception (cf. pp. 173-174). But, the positive and negative ends have changed places. In its extremes we find, on one hand, subjective, global, and emotional relation to one's perceptual field and, on the other, formal, narrow, and objective orientation bound to the concrete reality.

The factor loads the essential elements of the concept of awareness emphasized in humanistic psychology and the Asian philosophies (cf. pp. 46-47).

The factor explains 5.6 % and 11 % of the total variance and the explained variance, respectively. Its coefficients of reliability are; I .89, II .89.

The following variables acquire high loading with the seventh factor:

Variable	Loading	h^2
3020 Job sat. I	.53	.47
3017 Sex	.50	.30
3003 Psyc.und.	.46	.28
3005 Psyc.biol.et.	.44	.79
3013 SOC	.40	.33
3006 Biol.et.	-.53	.61

This factor did not come up in the factor analysis of the total subject group. It could be named the dimension of spirituality vs. materiality. At its positive end, loading is found in realized professional ambitions, expectations, and objectives, in psychobiological etiological explanations of health, in a certain timidity or lack of self-confidence, in a positive relation to religion, and in the religious and moralistic explanations of the etiology of mental health. Spirituality and the intentionality and purposiveness of life, i.e., some of the essential elements in the humanistic perception of man (cf. Chapter 2.2.2., pp. 27-33), are thus observable within this factor. This perception of man seems to have been adopted especially by women. The negative, materialistic, end of the factor comprises the biological explanations of the etiology of health, a positive cognitive self-conception, and a sense of reality (nr. 3015, 3047; statistically near-significant).

From among the factors described in earlier studies, the present factor is most closely related to Coan's dimension of transcendence, and its negative end is also similar to the factor of self-confidence and self-actualisation of Bottenberg et al. (p. 117).

The factor explains 5.2 % and 11 % of the total variance and the analyzed variance, respectively. Its coefficients of reliability are: [illegible] .83, II .85.

The following variables acquire high loading with the eighth factor:

Variable	Loading	h^2
3004 Psyc.et.	.52	.38
3006 Biol.et.	.52	.61
3090 Phys.hlth	.50	.45
3030 T/R	.32	.34
3005 Psyc.biol.et.	-.76	.79
3044 $\bar{x}$ PD	-.54	.34

The contents and percentage of explained variance of this factor are very similar to those of the sixth factor of the factor analysis of the total group (p. 176), the dimension of the etiological explanations of health. The seventh and eighth factors of the present analysis are not congruent in spite of loadings on the same variables. The sole utilization of psychic or physical etiological explanations is associated with physical health whereas belief in psycho-biological etiology correlates with ego-identity (nr. 3044).

The factor explains 4.7 % and 9.6 % of the total variance and the explained variance, respectively. Its coefficients of reliability are: I .84, II .85.

13.2. Factor analysis of the variables of group A: discussion

Both statistical and interpretational criteria prove the factor analysis successful. The question can naturally be raised as to the benefit of a separate factor analysis of group A since the basic dimensions obtained coincide with those acquired in the analysis of the total subject group. More factors are nevertheless isolated in the analysis of group A; these also turn out to be interpretationally interesting. In this latter analysis, all of the dimensions of Coan's model of the optimal personality are empirically demonstrated, including the dimension of transcendence. Also, the statistical criteria are met to the extent of enabling the use of factor scores in further processing of the results.

The selected variables functioned satisfactorily and as expected. One cannot, however, be totally satisfied either with the functionality of the mental health attitude and etiological explanation variables in this factor analysis. Their communalities and factor loadings remain low; these values are nevertheless above those obtained in the analysis of the total subject group. Contrariwise, the variables of the etiological explanations of health operate remarkably well and seem to be firmly coupled to the fundamental structures of personality. They can be considered as reflecting the basic modes of orientation of personality that direct the human being in his structuring of the world and his acquirement and selection of knowledge. The solution of the body-mind problem appears as an essential element in the orientation of the individual.

The FAM variables operate better in the factor analysis of group A than in the analysis of the total subject group. The variables still fall mainly within the dimension of mental disorder but acquire statistically significant loadings even with other factors. The basic dimensions of the MMPI described by Bottenberg et al. (1977; cf. p. 117) are demonstrable among these variables. The job satisfaction variables and the estimates of health are well functional and meaningfully interpretable.

High communalities and loadings are acquired by the majority of the Rorschach test variables including those that measure ego-identity. Here only the variables of achromatic (nr. 3039) and original (nr. 3048) responses display communalities below .30.

The Rorschach test scales of defensiveness (nr. 3052-3055) specially developed for this survey acquire high communalities and operate in a way theoretically expected (cf. pp. 48-49). The most severe pathological reactions measured by this group are those revealed in the scales of repression (nr. 3052) and regression (nr. 3054).

In this analysis, narcissism (nr. 3056) occurs separate of pathological reactions. Judged by the low mean of the variable, narcissism seems to call for interpretation as an expression of self-confidence rather than as a negative aspect of personality. Especially as it is loaded concurrently with the other factors of self-confidence in factor analysis.

In addition to defenses, anxiety, aggressiveness, and hostility were described in the theoretical section (cf. pp. 49-50) as hindrances to conscious activity. The FAM scales measuring anxiety, lack of self-confidence, and hostility (nr. 3010, 3011, 3013, 3014) are negatively associated with the variables of self-esteem (ES and job satisfaction) in the factor solution. Similarly, the Rorschach test variables that are interpreted as expressing anxiety (nr. 3039, 3049) stand in a negative relation to factors of ego-identity. Contrarily, the aggressive responses (nr. 3050) are not associated with the other pathological variables; instead, they function as sources of energy both for productivity and adaptive regression. In accordance with the theoretical discussion, the factor analysis came up with anxiety and hostility as hindrances to conscious activity.

13.3. Self-consciousness

In the theoretical section, the issue of human mental health was seen to revolve around the problem of the self-conscious mind, its development and manifestation. According to Popper and Eccles (cf. pp. 22-23), self-consciousness is born out of an interactional relation between neurophysiological and mental phenomena, with the mental determinants as the directive element. They describe consciousness as determined by external and internal perceptions integrated by the self-conscious mind.

Marxian psychology (cf. p. 25) and the phenomenological theories of self (cf. pp. 28-31) see action and societal interaction as the effectors of self-consciousness.

In principle, the human conception of oneself can be considered as developing through the same psychic processes as the structuring and symbolization of any other object. There is an essential difference, however, in that the individual can utilize even experiences or so-called internal knowledge in self-observation. An interesting question is the abstraction of originally physical experiences by the human mind. This abstraction is assumed to proceed according to the general deductive processes adopted by the individual.

Hypothesis A stated accordingly: Self-consciousness is associated with the social relations and the sense of reality of the individual.

In the above factor analysis, it is the dimension of mental disorder (IV with total group, cf. pp. 174-175; III with group A, cf. pp. 180-181) which seems to measure best the self-consciousness of individuals. In this dimension, high loadings are acquired by the self-reports on the operation of one´s body and mind as well as by the social relations of the individual, as was expected. There are in addition associations with sense of reality. In the dimension of social adaptation (V with group A, cf. p. 182), self-conception is even more strongly than before associated with social relations and cooperativeness. Hypothesis A can be considered partly substantiated. The above dimensions consist principally, however, of FAM variables. This may be of test-technical origin, but the problem warrants elucidation.

As Barron´s ES scale seems the best general positive self-variable and as its interpretation has been somewhat unestablished (cf. pp. 120-121) it was selected as a representative variable of self-consciousness for correlation analysis with variables other than FAM. Table 20 presents the statistically significant correlations of the ES scale.

The correlations in Table 20 show that the ES scale has, as expected, important associations with factors of the outer reality and with social relations. Associations are not detected with psychological understanding or the other factors of intrapsychic integration. All the defenses of the ego except repression dis-

Table 20. Correlations of the ES scale with variables other than FAM

Total group (N=160)

Variable	r	p< (two-tailed test)
3002 Soc.res.	-.18	.05
3047 RI	.20	.02

Group A (N=76)

Variable	r	p< (two-tailed test)
3016 Age	.34	.01
3001 Psyc.soc.st.	-.27	.02
3003 Psyc.und.	-.27	.02
3028 Ment.htlh	.30	.01
3029 R	-.25	.05
3046 Pt	.28	.02
3053 Intell.	-.22	.05
3054 Reg.	-.36	.01
3055 Proj.	-.23	.05

play marked negative correlation with the ES scale. As social more than intrapsychic consciousness seems to be emphasized in the ES variable, it is more appropriately called a scale of self-esteem than a scale of ego strength. Thus, however, it also acquires some of the cognitive aspects of Coan´s dimension of inner harmony.

It thus seems established that the dimension of cognitive self is not a technical artifact but a true unit consisting of the cognitive and social factors assigned to it in the factor analysis.

The cognitive self-conception discussed here is just one, and by no means an all-comprehensive form of human self-consciousness. A mastery of it is insufficient from the mental health point of view. Other equally essential determinants of mental health and the conception of mental health are self-awareness, intrapsychic, social, and societal consciousness.

13.4. Association of etiological explanations and the changes in these, with mental health, education, and demographic variables (problem 3)

It was already demonstrated in the factor analyses above that the etiological explanations of health are located in the dimensions of mental health and connected to the basic structures of personality. It was shown that the etiological explanations correspond to the mode in which the subjects structure and classify their field of perception.

As mentioned before, training induces no statistically significant alterations in the etiological explanations (B2/1980 - B1/1978; cf. Tables 9 and 15). In group B, the psychological explanations of health etiology become more common with training, but the change remains statistically non-significant. In group A, the biological explanations of health etiology stand in negative correlation with earlier academic achievements but not with more recent ones nor with demographic variables (cf. Appendix 25).

14. TRENDS OF DEVELOPMENT IN THE DIMENSIONS OF PERSONALITY

It was possible to demonstrate in the above factor analyses dimensions that correspond to those in Coan's model of the optimal personality. As mentioned earlier, Coan's approach does not have an individual focus but rather a more general human and cultural-historical perspective (cf. pp. 55-58).

It is nevertheless the hypothesis here that the basic dimensions described by Coan are even empirically demonstrable in the developmental trends of individuals. This assumption is based on the earlier research presented in the theoretical section (cf. pp. 58-59). Empirical investigations of developmental trends have been performed especially in connection with surveys of children and young people (cf. Kagan & Moss 1962). Corresponding surveys of adults have been rare and they do not provide models for the present study.

There are many sources of error associated with the examination of developmental trends; some of these have already been mentioned (cf. p. 93). The effects of many of these are exceedingly difficult to survey. In the case of the present group of teachers, for instance, it is well-neigh impossible to investigate whether the effects of the changes in the cultural, economical, and educational structures of our society have been unidirectional in the personality of all the teachers. A situation is conceivable where these effects are different and even opposite in different individuals; they are then eliminated from the results in a trend analysis based on the observation of means. It has been possible to control this phenomenon in some variables of the survey with correlation analyses of the individual scores differences. These kinds of problems of analysis are non-existent in case studies where examination of individual changes constitutes the essence of the analysis. A study of the attendance of group A at the re-evaluation of 1980 showed that dropping-out had not appreciably changed the composition of the population (cf. pp. 101-102).

The present description of developmental trends comprises not only an analysis of the effects of the general circumstances of the period but also an elucidation of the influence on personality of other so-called determining variables not directly controlled by the individual; the latter variables include, i.a., voluntary post-graduate training, changes of school, location of school, school community, and family relations (cf. p. 99).

In the following, the factor scores of the dimensions of personality of group A (nr. 6000-6007) will be analyzed in relation to the cognitive and practical abilities of the teachers and the capacity of their personality at the beginning of their career. The former are measured with academic achievements and the latter with the Rorschach test results of 1958-1959. The other so-called determining variables, or regressors, of this analysis comprise the earlier-mentioned post-graduate training, local circumstances, and school communities (cf. Appendices 1, 23, 24).

In spite of the term "determining variable" employed above, the objective here is not prediction or the detection of scientific causality but the historical description and explanation of the developmental trends in personality. The trends of development described here are products of a particular period in the history of society and they cannot, despite their wider human applicability, be directly availed of in prediction.

No statistical method could be found that would operate really well in an empirical analysis of developmental trends. A tentative correlation matrix prepared with the factor scores and the regressors showed that different factors correlate with different variables without much overlap. It was thus clear that these correlative associations could not be analyzed with canonical-correlation methods, e.g., canonical analysis. Separate path analyses might have been a functional solution had it not been for the fact that the regressors of this study fail to meet the criteria for the employment of path analysis, i.e., the absence of reciprocal interactions and cyclic chains of influence (cf. Sänkiaho 1974, 63).

Intercorrelation matrix of the variables of the regression analysis appears in Appendix 33. The regression analyses will be presented in factorial order.

14.1. Description of the dimension of productivity

Regressand: Group A factor of productivity (nr. 6060)

Regressor	Standardized regression coefficient	t	$p<^*$	Inc. in mcs
3054 Reg. (1958)	.31	3.0	.01	.08
3053 Intell. (1958)	.29	3.0	.01	.08
3048 ΣO+ (1958)	.26	2.6	.02	.06
3037 ET (1958)	-.26	-2.5	.02	.05

R^2 .40, F (4, 71) = 11.60, $p<.001$
R .63
* two-tailed test

A four-variable regression model explains 40 % of the variance of the factor of productivity. This percentage of explanation is statistically significant and it must be considered highly satisfactory. It is only the Rorschach test variables that have significant associations with the factor.

The first three of the selected variables acquire high loading with the dimension of productivity in the factor analysis of group A as well as in the analysis of the total subject group (cf. pp. 172, 179). Contrariwise, the appearance of experience type in the model was unexpected on the basis of the earlier results. It is nevertheless rational from the view of interpretation: The extratensive type of experience is associated with productivity.

The regression analysis presents productivity as a personality characteristic largely independent of socio-economical and socio-ecological factors and governed by intrapsychic determinants. Productivity is expressed in different aspects of personality at different ages.

14.2. Description of the dimension of inner harmony

Regressand: Group A factor of inner harmony (nr. 6001)

Regressor	Standardised regression coefficient	t	p<*	Inc. in mcs
3041 GL (1958)	.27	2.5	.02	.07
3052 Rep. (1958)	-.28	-2.6	.02	.07
3093 Obl.mat.ex.	-.18	-1.7	.10	.03
3043 $\bar{x}$ (A-S) (1958)	.17	1.5		.03

R^2 .21, F (4, 71) = 4.66, p<.01
R .45
* [illegible] tailed test

The regression model explains 21 % of the variance of the factor of inner harmony. The percentage of explanation is statistically significant. The Rorschach test variables constitute the principal explainers in this model as well. These variables also acquire high loading with the dimension of inner harmony in the factor analyses of both group A and the total subject group (cf. pp. 173, 180). They thus constitute the core factors of the dimension. The fact that the number of points in the obligatory subjects of the matriculation examination presents itself negatively, within the model, points to the possible incompatibility of a cognitive drive and inner harmony. Inner conflict may act as an incentive for cognitive ambition. Integrative perception, strong self-confidence, and an openness of experience (or, in this context, an absence of repression) are the most significant interrelated elements of inner harmony.

This dimension, too, is composed of intrapsychic factors without direct association to socio-economical or socio-ecological determinants.

14.3. Description of the dimension of mental disorder

Regressand: Group A factor of mental disorder (nr. 6002)

Regressor	Standardized regression coefficient	t	p<*	Inc. in mcs
3034 F% (1958)	-.25	-2.4	.02	.06
3027 Life ch.	.31	3.0	.01	.09
3025 Loc.sch.	.25	2.4	.02	.06
3095 Teac.dipl.	.19	1.8	.10	.03
3032 ΣS (1958)	-.15	-1.5	-	.02

R^2 .32, F (5, 70) = 6.55, $p<.001$
R .56
* two-tailed test

The regression model explains 32 % of the variance of the factor of mental disorder. This percentage of explanation is fairly high and statistically significant. As recalled from the factor analysis, positive values in the dimension display weak self-esteem and other disturbances of mental health. The appearance of the Rorschach test variables in the regression model may seem surprising. These variables acquired no significant loading with the dimension in the factor analysis of group A nor in the analysis of the entire subject group (cf. pp. 174-175, 180-181). Instead, F% (1958) is statistically near-significantly correlated with attitudes of social restriction (cf. pp. 167). The interpretation of the variable is similar in that context as here: It can be considered an expression of a sense of reality. It should be remembered that with the present teachers F% is lower than average (cf. p. 146 and Table 10). The S responses, again, express individuality and activity. Both the variables constitute factors of self-esteem.

The origin of mental disturbance is in this combination of variables explained by the experienced changes in life and the urban environment. The settlement of a teacher in an urban district is, in itself, enhanced by a good teachers' college diploma and also by specific traits of personality (cf. pp. 163-164, 196-197).

In factor analysis, the dimension of mental disorder was described as the interpsychic cognitive self (cf. pp. 187-189) of the individual whereas the preceding dimension was considered an intrapsychic one. The regression model supports this interpretation in that the socio-economical and the socio-ecological variables contribute highly significantly to the present model. These are variables upon which the individual rarely has direct influence.

14.4. Description of the dimension of adaptive regression

Regressand: Group A factor of adaptive regression (nr. 6004)

Regressor	Standardized regression coefficient	t	p<*	Inc. in mce
3091 Sch.cert.	-.31	-3.0	.01	.09
3053 Intell. (1958)	.29	2.7	.01	.07
3032 ΣS (1958)	-.23	-2.3	.05	.05
3050 ΣAgg. (1958)	.20	1.9	.10	.04
3086 Psyc.stud.	-.18	-1.5		

R^2 .31, F (5, 70) = 6.36, p<.01

R .56

* two-tailed test

The regression model explains 31 % of the factor variance. The result is statistically significant. The variables of intellectualization and aggressive responses of the Rorschach test also acquired marked loading in the factor analysis of group A and the analysis of the total subject group (cf. pp. 175, 182). They can thus be considered core factors of adaptive regression. Contrariwise, good academic achievement and strong cognitive drive emerge as opposites of adaptive regression. This is another principally intrapsychic dimension.

14.5. Description of the dimension of social adaptation

Regressand: Group A factor of social adaptation (nr. 6006)

Regressor	Standardised regression coefficient	t	p<*	Inc. in mcs
3086 Psyc.stud.	-.28	-2.7	.01	.07
3095 Teac.dipl.	-.24	-2.3	.05	.05
3053 Intell. (1958)	.35	3.2	.01	.10
3050 EAgg. (1958)	-.22	-2.0	.05	.04
3055 Proj. (1958)	-.19	-1.7	.10	.03

R^2 .30, F (5, 70) = 6.08, p<.01
R .55
* two-tailed test

The regression model explains 30 % of the variance of the factor. The percentage of explanation is statistically significant. The trend in the dimension of social adaptation is already discernible in the teacher training stage. It is unassociated with needs for academic success and, later on, with any interest in post-graduate studies. Instead, there is a realistic view of one's own potential, and good social consciousness and mental health. Also the variables of job satisfaction become loaded with the factor of social adaptation (cf. pp. 182-183). The result is in agreement with the results of Koskenniemi et al. (1965, 328-330) and Louhimo (1969, 109-110; cf. pp. 81-83). Louhimo demonstrated a group of teachers who achieve below average in teacher training but who nevertheless are content in their job as teachers.

14.6. Description of the dimension of analytical vs. global perception

Regressand: Group A factor of analytical vs. global perception (nr. 6007)

Regressor	Standardized regression coefficient	t	p<*	Inc. in mcs
3035 $\bar{x}$ C (1958)	.18	1.7	-	.03
3093 Obl.mat.ex.	.28	2.5	.02	.07
3048 ΣO+ (1958)	-.20	-1.8	.10	.04
3047 RI (1958)	-.19	-1.7	.10	.03

R^2 .19, F (4, 71) = 4.12, $p<.01$
R .43
* two-tailed test

The regression model explains 19 % of the factor variance. The percentage of explanation is statistically significant. The result confirms the notion derived from the earlier factor analyses. A global relation to one's perceptual field and to one's experiences is a permanent way of orientation which presupposes certain psychic maturity. The combination of variables in the model is interpretationally similar to that of the dimension of spirituality vs. materiality (cf. following page). The dimensions are not, however, entirely congruent. As recalled, Coan assumed some similarity in these two dimensions (relatedness and transcendence, cf. p. 57).

14.7. Description of the dimension of spirituality vs. materiality

Regressand: Group A factor of spirituality vs. materiality
(nr. 6003)

Regressor	Standardised regression coefficient	t	p<*	Inc. in mcs
3093 Obl.mat.ex.	.31	2.4	.02	.06
3045 A% (1958)	-.19	-1.8	.10	.04
3094 Comp.	.21	1.7	.10	.03

R^2 .24, F (3, 72) = 7.46, p<.01
R .48
* two-tailed test

The regression model explains 24 % of the factor variance; this value is still statistically significant. The dimension of spirituality vs. materiality appears to define the level and quality of individual thinking. Its spiritual end contains a capacity for theoretical speculation and verbal self-expression, and the material and the concreteness of perceptions. The other variables of the correlation matrix that acquire high correlation coefficients with the dimension are interpretationally in the same category. The sex variable also plays an important part in this dimension (cf.p. 184).

14.8. Description of the dimension of the etiological explanations of health

Regressand: Group A factor of the etiological explanations of
health (nr. 6005)

Regressor	Standardised regression coefficient	t	p<*	Inc. in mcs
3042 [illegible]% (1958)	.27	2.2	.05	.06
3054 Reg. (1958)	.31	2.6	.02	.08

R^2 .10, F (2, 73) = 4.13, p<.05
R .32
* two-tailed test

The regression model explains 10 % of the factor variance. The result is statistically near-significant. In the regression model the highest correlations have the Rorschach variables human responses and regressive reactions. This combination is difficult to interpret. While the result thus allows no extensive interpretations, it still demonstrates the firm association of the etiological explanations with the basic reactions of personality. They can thus be predicted within the frame of the developmental trends.

14.9. The correlative associations of some regressors in the survey

The regressors were selected from among factors that earlier teacher surveys (cf. pp. 91-92) had demonstrated important explainers of the activity of teachers; these include certain personality characteristics, academic achievements and the cognitive abilities required by these, location of school, size of school, changes of school, the level taught, post-experience studies, and marital status.

Many personality characteristics measured with the Roschach test in 1958 as well as some cognitive abilities acted as important explainers in the above regression analyses and thus their correlative associations have already been described. What has as yet received insufficient attention is the effect on teacher activity of the following determinants: selection of job location, grades achieved in teacher training, the level taught, marital status, and post-experience training. Accordingly, some statistically significant correlative associations that have been afforded only superficial attention in the previous analyses will be examined below (cf. Appendix 35 for the correlations).

The size and location of the school (nr. 3024 and 3025, respectively) correlate in a way that is statistically highly significant (r=.58). The small schools are located mainly on the countryside. As brought out earlier (cf. pp. 163-164), the teachers in these schools are more religious than the other teachers and apply the religious and moralistic models to the explanation of mental health etiology (nr. 3007 and 3000). They are also more satisfied in their job (nr. 3020, 3021) and more interested in people than the other teachers (nr. 3042 in 1958 and 1980).

The teachers in large schools express more anxiety than those in smaller schools (nr. 3049 in 1980). This circumstance cannot, however, be ascribed off-hand to the influence of school size, especially since the same teachers already expressed more psychic problems than the others during teacher training (the 1958 Rorschach variables 3040, 3041, 3042, 3054). The teachers in large schools participate more frequently than the others in post-experience training (nr. 3087), and they are more dissatisfied in their job than the others (nr. 3020, 3021). The teachers in urban schools (nr. 3025) express more psychic disturbances than the teachers in rural areas (nr. 3011, and the 1980 Rorschach variable 3041) but here too the disturbances had already been apparent with these teachers during teacher training (nr. 3037, 3041, 3042 in 1958). In spite of the aforementioned correlation between school size and school location, no straightforward parallels can be drawn between these schools concerning the psychic characteristics of their teachers (cf. Appendix 33). The teachers in large schools express more anxiety and regression whereas weak self-esteem and repression are more frequent in urban schools. Thus the occupational environment and the mental health of the teacher seem to constitute a complex chain of interactions.

The above results offer interesting perspectives for a discussion of the recruitment of teachers into different schools and the reasons for school change. In this survey, changes of school (nr. 3026) are significantly correlated not only with other changes in life (nr. 3027) but also with certain Rorschach variables such as affectivity, impulsiveness, extratensiveness, and weak perceptual control, (nr. 3037, 3040, 3041). The results of this survey fully support the notion of Koskenniemi (cf. pp. 82-83) that changes of school are not primarily bound to societal changes but to the individual life situations and personality characteristics of a teacher.

Teachers in the lower level of the comprehensive school (nr. 3089) more often than the other teachers are married or live in a companionate marriage (nr. 3018); they also have more children (nr. 3019) and participate less frequently than the other teachers in post-experience training (nr. 3086, 3087). This survey does not substantiate the finding of Mäkinen (cf. pp. 80-81) that the lower level teachers are more satisfied in their job than the teachers in the upper level.

Those who are married or live in a companionate marriage display less psychic disturbances than the others (nr. 3028). The result coincides with that obtained by Väisänen (1975, 68-69). These teachers, more than the other teachers, have been interested in people (nr. 3042) during teacher training but they exhibit less interest in post-experience studies of psychology (nr. 3086).

The grades achieved in teacher training, the mean of grades in the diploma (nr. 3095) and the grade in teaching ability (nr. 3096), correlate quite significantly among themselves and also with earlier academic achievements. Here the results correspond to those obtained by Koskenniemi et al. (1965; cf. p. 72) and by Koskenniemi & Alikoski (196[illegible]). Good achievement in teacher training holds negative prediction for subsequent mental health and job satisfaction (nr. 3015, 3021, 3054).

Studies in psychology (nr. 3086) correlate significantly with the self-reports of psychic disturbance (nr. 3010, 3011, 3012, 3014). The interpretation can be put forward that psychology studies are more easily taken up by teachers with psychic problems. It is possible, on the other hand, that psychology studies increase self-observation and the detection of one's own symptoms and encourage the individual to express these disturbances. Support for the latter interpretation, can also be found in the results.

The foregoing discussion indicates, that the mental health determinants of teachers can not be explained with simple causal relationships; the question here is of most complex interactive processes.

15. SUMMARY

The study has been an analysis of the associations and changes of the health and mental health perceptions held by teachers, and of teachers' mental health evaluated by the teachers themselves and by the author.

In the theoretical section, mental health was approached from the views of physical, psychical, and social adaptation, biological maturation, and mental development. Mental health was defined as reciprocal and dynamic physical, psychical, social, and spiritual integration processes which may seem to contain contrasting elements but which nevertheless are in optimal relationship to one another (cf. p. 12). Mental health was understood to be multidisciplinary and multidimensional as a concept. The spiritual dimensions of man were examined in terms of humanistic psychology and through descriptions by Eino Kaila and Viktor Frankl (cf. pp. 27, 30). As mental health is considered a reciprocal integration process rather than an absolute state, it may include contrasting elements which, however, have to be optimally balanced. The descriptive frame applied here to the examination of mental health consisted of the dimensional model of the optimal personality developed by Coan (cf. pp. 55-58), which is derived not only from an analysis of conceptions of man prevalent in different cultures and in different eras, but also from empirical research. Coan's model in itself is an abstraction. In this study, the model was concretized by empirical results structured into a dimensional model, or a relational organization of mental health, with factor analysis.

A conception of mental health was considered to contain implicitly a conception of man: an idea about human existence, the primariness of spirituality or materiality, the determination of behavior, and the meaning of life. Thus a review was made of the conceptions held by the various schools of philosophy and psychology during the period of study, i.e., of the prevailing conceptions of man from the 1950's to the 1980's and of the changes in these that may have affected the school legislation.

In this study, the transfer and renewal of culture were considered the essential functions of the teacher (cf. p. 35). Accordingly, the conception of man held by humanistic psychology was considered an adequate frame of reference (cf. pp. 36-37). Despite the emphasis on the spiritual aspects of man, no attempt was made to draw justification from the cited literature for a primariness of spirituality or materiality in man. The solution of the issue was deemed dependent on everyone's personal conviction. Empirical research describes the physical, the psychical, the social, and the spiritual as the dimensions of human existence. These dimensions can be shown to form a most complex interrelationship, without any two of the dimensions being identical.

The prevailing conceptions of man, the ideal individual, and mental health are dependent on the structure of society. Societal change is reflected, i.a., in educational objectives and in the planning of education. Written documents indicate that with the approach of the 1950's there is in education and psychology a changeover from a former, religious and humanistic, conception of man to a behavioristic and biological one; the latter also prevails in psychiatry at that time. The behavioristic and biological outlook never gains absolute dominance, though; concurrently even the humanistic and the phenomenological traditions have their supporters. Along with the school reform in the 1970's, psychological and societal elements become incorporated into conceptions of man. Recently there has been a renaissance of the spirituality of man and a consequent re-emphasis on humanistic aspects in conceptions of man (cf. pp. 29-33).

No earlier empirical studies existed in our country of the perceptions of man and mental health adopted by educators, or of changes in these. Indirect evidence of these perceptions was nevertheless obtained through a survey of the expressed educational objectives of various eras. A review of the empirical studies of educational objectives performed in Finland from the 1960's to the 1980's (cf. pp. 64-69) reveals an emphasis on both communal and personal objectives in the 1970's and the 1980's, whereas objectives of knowledge and skill seem to have been accentuated in the 1960's. Religious objectives appear non-uniform throughout the period of observation.

One of the results of the comparison of the Western and Soviet educational objectives performed by Sauvala and Kari (cf. pp. 75-76) was that congruent elements can be discerned in conceptions of human existence and educational objectives, in spite of differences in the adopted world views and in philosophical origins of conceptions of man. In both spheres of culture, valuation of human traits such as the following can be detected: social responsibleness, trustworthiness, and harmonious personal growth. Differences in educational objectives appear mostly in elements such as collectivity, individuality, and democracy as well as in the issue of the primariness of spirituality or materiality.

The human mode of knowledge acquirement and conceptualization forms an essential factor in the examination of the associations of mental health and perceptions of mental health. The theoretical section thus examined at length the conceptions, i.a., of Bergström (cf. pp. 20-21) and Eccles (cf. pp. 22-23), concerning the neurophysiological processes of psychic phenomena: the development of consciousness and, in particular, self-consciousness. In general, the views concerning the latter events and the formation of concepts are contrasting. Bergström sees the psyche as an energetic phenomenon, whereas to Eccles the psychic and the neurophysiological appear as elements of a complex reciprocal relationship and the self-conscious mind as an independent entity of its own. According to Eccles, consciousness is born in the integration by the self-conscious mind of the various activities of the cerebral cortex: The self-conscious mind and the neural phenomena thus seem interrelated, without being identical.

In the transcendental analysis of knowledge presented by Kant (cf. p. 29), it is the subject, or the conceiving consciousness, that gives knowledge its aprioric forms. All knowledge must thus be regarded in relation to the human being that forms it. According to Kant and Husserl (cf. p. 29), however, universal knowledge also exists. The view was applied in this study that every adopted concept always stands in relation to experience, or to what is known as phenomena. Similar resources and common cultural and life experiences of different individuals nevertheless also produce universal experiences and hence concepts congruent in content. This study has searched for general observations and experiences connected with the adoption of different perceptions of mental health.

Man utilizes himself as a point of reference as he structures the world. In the formation of conceptions of mental health, the point of reference is provided by one's own experiences of consciousness, one's own mind. This is made possible by the capacity of man to experience, and to analyze his experiences, to be both the subject and the object. Here man has been considered as conscious, intentional, active, and purposive; that is, as forming contents of meaning and as consciously directing his own life. Corporality and the world - society, social relations, nature and space - have been considered as constituting the conditions for consciousness. (Cf. p. 36)

Earlier research reports and other works concerning the activity and mental health of teachers have underlined the following role expectations and occupational factors as essential in the profession: A teacher in her work makes use of her entire personality, but particularly of her cognitive ability and mastery of and adaptability to different social situations. More in detail, the significant factors of personality include the values and objectives adopted by the teacher, or her code of ethics, mastery of other contents of culture, relationship with other people, pupils in particular, consciousness of oneself, of one's social status and of one's influence in society (cf. pp. 91-92).

The educational objectives of today emphasize, more than before, democracy, social equality, justness, responsibleness, and internationality; teachers are now even required to have a more active orientation towards the society (cf. pp. 86-87).

The earlier teacher studies have described introvert, withdrawing, timid, anxious, aggressive, excessively ambitious, and self-centered teachers as risk types in regords to mental health (cf. pp. 91-92).

The empirical survey included two groups of teachers, each one of which was analyzed on two separate occasions. Inter-group comparisons were also made. Group A, who formed the subject group proper, had graduated in 1960 and group B in 1980 (N=76+87=153). Each group underwent evaluation at the beginning of their teacher training and again in 1980 (cf. pp. 101-105).

Mental health and social adaptation was surveyed with an abbreviated version of the MMPI (Minnesota Multiphasic Personality Inventory), or the FAM, with the Rorschach test, and with statements regarding job satisfaction. Health and mental health was also evaluated on the basis of data obtained in a thematic interview. The teachers' perceptions of health and mental health were measured with attitudinal statements as well as with alternative etiological explanations of a number of physical and psychical disorders. The mental health attitude inventories were formed from American inventories, from the OMI, the mental health attitude inventory developed by Cohen and Struening (1962), and from Durkin's (1964) inventory of the explanations of the etiology of mental health. The methods were specially adapted and tested for the present study (cf. pp. 107-139).

The teachers studied emphasized the psychological and social factors of mental health and rejected the religious and moralistic etiological explanations. Their attitudes were characterized by psychological understanding. Attitudes of social restriction only occurred to a minor extent. The teachers primarily applied biological explanations of health. A majority of the teachers surveyed nevertheless expressed a world view conforming to the Christian faith.

The teachers could be described as productive, cognitively oriented, and as possessing a well-developed inner control, with weakly developed or poorly expressed emotions. Teachers appear conventional in their thinking, and display an interest in their fellowmen. They have a fairly high self-esteem. The studied teachers showed a below-average frequency of mental disturbance; the incidence nevertheless agreed well with that obtained in other corresponding surveys of teachers and students (cf. p. 152-153).

The teachers proved to be more satisfied in their job than the population average, which is in accordance with the results of earlier teacher surveys. The estimates of their physical health also exceeded the population average, being slightly below those obtained for frontier guards (cf. Nieminen 1980, 3). Various allergies and psychosomatic symptoms turned out to be rather frequent among teachers. Mäkinen (1980/144; cf. pp. 79-80), in an earlier study, arrived at the same conclusion.

The sex-dependent differences found in the present study parallel those of earlier surveys (cf. pp. 152-153). The teachers of group A in particular conformed to descriptions of the average Finnish teacher in many details, including the demographic factors (cf. p. 149).

Problem 1 (cf. p. 94)
No significant difference was found between group A and group B in their etiological explanations of mental health whereas the teachers of group A were more psychologically understanding in their mental health attitudes than those of group B. The former also utilized psychological and biological elements in the explanation health more often than the latter, whose explanations were more frequently of a psychological nature. Group A express more authoritarian attitudes, self-esteem, self-criticism and sense of reality than group B, which again express more social alienation, but also the elements of creativity. In the projective techniques group B has more reactions of impulsivity, global perceptions, defensiveness, aggressive fantasies, narcissism and adaptive regression.

The personality disorders of group B appeared mainly in the dimension of acting-out whereas in group A the principal dimension was that of neurosis. (Cf. pp. 157-162)

Problem 2 (cf. pp. 95-97)
Important correlations appeared between the teachers' mental health, their perception of mental health, their level of education and some demographic variables. The religious and moralistic explanations of mental health and the socially restrictive attitudes seem to be anchored in the deepest structures of personality

and thus they are quite stable. Similar stability is detected neither in the psychological and social explanations of mental health etiology nor in the attitudes of psychological understanding.

Mental health attitudes were found to function adaptively, as expressing and defending the ego, but also as classifying the phenomena in one's environment (cf. pp. 163-170).

In accordance with hypothesis A, training was associated with lessening on the authoritarianism of teachers. The hypothesis nevertheless gained only partial support in statistical analysis.

Hypothesis B was substantiated in that training associated with the psychological understanding of teachers. This correlation was statistically significant.

As a verification of hypothesis C, the teachers' explanations of the etiology of mental health were statistically significantly more often religious and moralistic on the countryside than elsewhere (cf. p. 170).

Problem 3 (cf. p. 97)
In the dimensional model of both group A and the total subject group (cf. pp. 171-177, 178-187), the etiological explanations of health fell within the basic dimensions or constituted dimensions of their own. The etiological explanations corresponded to the subjects' mode of gathering and structuring perceptions. The biologically based explanations proved quite stable (cf. p. 166). No great importance could be attached to training as an influencer of etiological explanation (cf. Table 9 and Appendix 25).

Problem 4 (cf. p. 98)
The following dimensions of mental health could be discerned: productivity (efficience), inner harmony (functions of the ego), analytical vs. global perception (relatedness), mental disorder (cognitive self-conception), adaptive regression (creativity), etiological explanations of health, social adaptation, and spirituality vs. materiality (transcendence) (cf. pp. 171-187).

Problem 5 (cf. p. 99)
The dimensional model of group A included the manifestations of intrapsychic consciousness, self-consciousness, social and societal consciousness, and awareness in its dimensions of personality (cf. pp. 178-187).

Self-consciousness was observed to be associated with an individual's social relations and sense of reality, which was in keeping with hypothesis A. Self-conception and the functions of the ego (inner harmony) seemed to originate separately and fell within separate dimensions of personality (cf. pp. 180-181, 187-189).

Problem 6 (cf. p. 99)
The dimensions of mental health were also described as developmental trends in the teachers' life histories. The best prediction for inner harmony was provided by a personal capacity for problem solving through an open and creative integration of perceptions, through the expression of certain ego-identity, and without excessive ambition. Self-conception, on the otherhand, could be predicted from the degree of independence and sense of reality, the changes in life, the location of employment, and the degree of success in teacher training. Social adaptation was predicted by intellectualization, the amount of studies in psychology, the degree of success in teacher training, and the amount of aggressive fantasies and projection.

16. DISCUSSION

The teachers surveyed are quite similar to those of earlier teacher studies in personality description, i.a., in physical and mental health, job satisfaction, social adaptation, and religious orientation, as well as in a number of demographic variables (cf. pp. 91-92, 148-153). Consequently, the results obtained here may carry some wider applicability despite the fact that the actual results concerning the associations of teachers' mental health, perception of health and mental health, and the developmental trends in these, strictly only apply to class teachers graduated from the teacher training institution in Helsinki.

The mental health attitudes found among the teachers can be considered consistent with the role expectations directed at them (cf. pp. 64-78, 143).

There is inconsistency in the reasoning of most of the teachers. While claiming to have adopted the Christian faith, or a spiritual world view, they still deny primariness of the spirit in their body-mind solutions. Their solutions are dualistic in accordance with the Western tradition: Explanations for the origin of health are primarily found in biological etiology (cf. pp. 143-145).

The present survey endeavors to estimate the influence of cultural change by comparing the results of two groups of teachers, graduated at different times and representing two different stages of life. Statistically significant differences appear between the groups. No clear indication is obtained, however, as to which of the differences should be considered cultural in origin and which an effect of maturation with age. No perception of man is exclusive in either group, nor can any significant inter-group difference be observed in this respect. Our culture is characterized by a pluralistic perception of man. The result obtained does not exclude the possibility of changes in perceptions of man in the course of time. It appears that changes in perceptions of man only take place gradually and that an individual often modifies his conception even in adulthood. The present study thus fails to empirically demonstrate changes in the incidence of various perceptions of man. Contrariwise, such significant inter-group differences are demonstrated in self-expression variables and projective technique, which can be interpreted as the influence of cultural change. Group B are more democratic in their attitudes, they are more self-expressive, more comprehensive in their perceptions and they have more potential for creativity than group A: according to the school reform objectives the results above can be interpreted, as having more elements of democratism, independence, creativeness and internationalism, but there are also conflicting aspects. They show no more sociality or mental health among the middle aged teachers, rather on the contrary (cf. p. 161-162).

One may now inquire as to the content of the concept 'cultural change' applied in this study? Cultural change can be assumed to manifest itself in three ways: There is a general transition of values and behavior among the population. Valuation of the teaching career changes, causing different numbers and different personalities of students to be recruited into teacher training at different periods. The selection each time can only take place among the applicants available. A third influencing factor may derive from a change in the methods of selection effected by the teacher training institution, to favor the teacher type preferred by the culture of the day (cf. p. 161).

The results indicate that the teachers of group A have coped quite well with the transition brought about by the school reform. They can not be observed to suffer from any substantial identity crisis in their role as teachers, provided that their greater authoritarianism compared with that of group B is not considered as such.

The dimensions of personality distinguished also incorporate the teachers' mental health attitudes and explanations of the etiology of health and mental health. The attitudinal variables do not, however, constitute the main variables of the dimensions; thus they are judged not to belong to the core of personality.

Conceptions of health and mental health occupy an important position in the dynamics of personality. They correspond to an individual's mode of gathering information about himself and his environment and to his way of structuring this information. They are further associated with the manner in which one expresses oneself and one's values, but also with the types of defenses one adopts.

A religious conviction and the religious and moralistic etiological explanations of mental health all fall within the dimension of spirituality vs. materiality (cf. p. 184). The religious and moralistic etiological explanations can be interpreted as expressing values of the ego and the self, but they are also connected with personality variables that express defensiveness (cf. pp. 163-166); in the latter role they are protective of the ego and the self and function as derivatives of the defenses. The religious and moralistic etiological explanations prove very stable and little influenced, e.g., by teacher training. They can be considered firmly moored in the structure of personality. As they stand in significant correlation with scarcity of post-graduate training and with employment in small schools on the countryside, the interpretation can be made that scarcity of cognitive stimuli allows the mechanical solidarity prevalent in the rural areas to reinforce the dominating religious and moralistic attitudes (cf. p. 170).

The psychological and social etiological explanations of mental health are located in the dimension of productivity (cf. p. 172). No predictive value can be attached to the test data of 1958 in this context. These explanations undergo changes during teacher training. They are markedly correlated with the life changes of an individual. They are considered to have an adaptive role in the energetics of personality (cf. 166-167).

The attitudes of social restriction are found in the dimension of mental disorder. They have important correlations with variables expressing weakness of self and of functions of the ego (cf. pp. 167-168, 175). The attitudes of social restriction appear quite stable and resistant to change. The variables of the Rorschach test of 1958 function as predictors of these attitudes. These attitudes, too, can be regarded as defending a weak ego and self and to function as derivatives of the defenses.

The attitudes of psychological understanding fall within the dimension of spirituality vs. materiality (cf. p. 184). They are associated with cognitive abilities and activity, i.a., experienced changes in life and expression of one's own problems. Psychological understanding increases with mounting life experience (cf. p. 168). These attitudes can be interpreted as expressing values of the ego and the self and as operating in an adaptive manner. They are not very stable and are associated with teacher training.

In accordance with the assumptions made, same attitudes appear to perform different tasks, often depending on the stage of life of the individual.

Etiological explanations of health are located in deeper structures of personality than are the mental health attitudes described above. They are connected with the way in which an individual structures his experiences and perceptions. In the dimensional model of personality, they are found in the dimensions of analytical vs. global perception and spirituality vs. materiality (cf. pp. 173-174, 183-185), but they also form a dimension of their own, the dimension of the etiological explanations of health (cf. pp. 176, 185). The 1958 test variables function as predictors of these explanations. The biological explanations of etiology turn out to be more stable than the psychological or psycho-biological ones (cf. p. 166, Table 18). Alteration of the former is difficult whereas both the latter seem more easily affected as they are associated with cognitive ability and intellectual curiosity.

The different manifestations of consciousness, so important from the view of mental health, can also be described within the dimensions (cf. pp. 45-50). Internal control forms an essential element in the intrapsychic consciousness of the second factor. It is dependent rather on internal experience than on external influence (cf. p. 180). The self-consciousness of the third factor (cf. pp. 180-181) seems to originate in real human relationships. It is dependent on outer reality, i.a., changes in life and place of residence (cf. pp. 195-196). The social and societal consciousness contained in the fifth factor (cf. pp. 182-183) is connected with social adaptation. Its correlative associations can be interpreted as indicating that a socially conscious individual either searches for an environment corresponding to his abilities and to his values, or attempts to modify his environment to this effect. The sixth factor encompasses determinants of awareness (cf. pp. 183-184).

The negative pole of the manifestations of consciousness includes anxiety, hostility, and defenses such as repression, regression, and projection. These are modes of reaction described in the theoretical section as hindrances to the development of consciousness (cf. pp. 45-50).

In the study, the functions of the ego and the factors of self produce well-discernible dimensions with their respective manifestations of consciousness. Here the functions of the ego describe an acting and experiencing individual, whereas in self-conception an intervening element is constituted by self-evaluation, or the objectification of oneself.

The described dimensions of mental health were hypothesized on the basis of earlier surveys, and they can also be observed as dimensional trends of personality development.

An examination of the role of separate variables shows that the external conditions of life or the family structures of teachers carry little predictive value. This observation may nevertheless have a test-technical origin. Here the various test variables dominate in the statistical analyses. The influence of demographic variables should perhaps have been determined qualitatively, i.a., with cross-tabulation, instead of the correlation analyses applied. This point is left to be settled by future studies, however.

It is conspicuous in the results that academic success, i.a., in teacher training and in post-graduate studies, holds negative prediction for dimensions of personality such as inner harmony (cf. p. 194), self-conception (cf. p. 195), and social adaptation (cf. p. 197); the latter are factors of mental health and job satisfaction. A critical stand has already been taken in the theoretical section concerning the predictive value of the grade in teaching ability; conscientiousness and the cognitive abilities have been said to carry too much weight in the determination of the grade (cf. pp. 61-64). Some of the studies reviewed also reveal the generally low predictive value that the grades acquired at teacher training institutions have for future success in the teaching profession, this predictive value has in addition been observed to decrease further with the number of years taught (cf. pp. 84-86). The risk types described by earlier research include the excessively ambitious teachers striving for excellence (cf. pp. 91-92). These notions gain support from the present findings.

The concept 'prediction' appears frequently in the above review of results. It must be stressed that here its usage deviates slightly from that found in natural science. Because of the conception of man adopted, the present survey can not utilize research models and bases of interpretation derived strictly from natural science. Here man is described as a purposive, self-conscious, and self-reflective being instead of a closed organization (cf. p. [illegible]). From these origins, the data concerning man are always more or less interpreted. In research of man utilizing teleological terminology, the models of description and explanation can in principle never be reduced to explanation with pure cause-effect relationships. It is [illegible] though, that the conception of causality is in transition even within natural science (Laurikainen 1980, 99-104). As human activity is thus not directly predictable, most of the research of man consists of historical explanation. (Ketonen 1981, 71-88; Krohn 1981, 234-241; Mehtonen 1981, 104; Taylor 1975, 272-275; Wright 1971, 97-118; 1976)

When the associations of different phenomena are observed in the present survey, it is the various correlative associations that constitute the objects of study. This interpretation enables a vision of dialectical processes between phenomena. What is sought in the results, are general trends of development which, while providing some direction for the planning of teacher education, are not construed as providing prediction on the level of the individual. It is also impossible in this type of survey to observe individuals from the view of uniqueness, i.e., subjectivism. Though the irrational dimensions of man, such as spirituality, fall outside the main focus of this survey, they have a significance in the composition of a comprehensive conception of man and in human life in general.

Follow-up studies, which is mainly what the present study is, are often depreciated. Follow-ups are tedious to perform, the present study being no exception. The results provided by them are primarily historical and can not be availed of in prediction. In addition, there are a number of sources of error difficult to control, and the results are seldom unequivocal. These handicaps force the question of whether follow-up studies are worth the resources invested.

Katz, Raths, Mohanty, Kurachi, and Irving (1981) have reviewed the follow-up studies of teachers published in English in the 1970's (N=26) from the viewpoint of the applicability of the results in the planning of teacher training. Despite their narrower scope and shorter period of observation compared with the present survey, the reviewed studies appeared valuable for practical teacher training.

As it is, one of the aims in this study was to provide basic data for preventive mental care in schools. The results obtained may prove useful in the planning of selection of students for teacher training; they may also find use in designing the contents of teacher education, post-experience training, and supervision.

According to the results, cognitive endeavors - good grades in teacher training and post-experience studies - hold negative prediction for future mental health and contentment with the teaching career. Ways should be sought to screen out excessively ambitious individuals in the selection or to direct the ambitions of such students onto a more adequate course. Special effort should be made to alter the criteria of the grade of teaching ability and to de-emphasize it in the screening of applicants for vacancies.

The Rorschach test appears to have substantial predictive value for mental health. However, the tediousness of the method and the difficulty of its interpretation render the Rorschach test unsuited for use in student selection. Performation of the test further requires considerable professional skill, and the legal security and personal intimacy of the subjects are difficult to guarantee if it is applied to the selection of students.

Of the Rorschach test variables, the Genetic Level of Becker (cf. pp. 131-132) proves the best predictive of mental health; it is a variable measuring the level of integration of perception and the capacity of an individual for creative problem solving. Even other methods exist for measuring these psychic processes, of course. It is also conceivable that these processes could be reinforced in teacher training. Conceptions of mental health - the mental health attitudes and the etiological explanations of health and mental health - can be influenced by basic and post-graduate teacher education. In the case of psychological and social attitudes, even purely factual information may suffice, although parallels to one's personal experience naturally greatly enhance the influence on one's attitudes. On the other hand, biological or religious and moralistic etiological explanations or socially restrictive attitudes are more difficult to influence. If they function as expressions of the values of the self or of the ego, their alteration can be attempted in supervision groups with an examination of the value objectives contained in these elements. In cases where these attitudes are defensive of a weak ego or self, or when they are part of an individual's basic mode of structuring observations and experiences, longer and more profound intervention and analysis may be required and no quick results can be expected. There are teachers who suffer from such severe inner conflicts and problems of mental health that regular psychotherapeutic treatment seems warranted.

It is left for further studies to investigate the extent to which teachers express the factors of mental health surveyed here and confer corresponding conceptions of health and mental health to their pupils. These problems were not solvable in the present endeavor. The factors of mental health described should be conceived as potentials of personality whose expression in concrete life situations, e.g., in the teacher-pupil relationship, is determined by situational factors and the nature of the relationship involved.

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APPENDIX 1

LIST OF VARIABLES

1-63	The attitudes towards mental health and etiology questionnaire
64-66	The list of health disorders
67-232	The items of the FAM-test
237-253	The job satisfaction items
3000	The religious and moralistic etiological explanation scale
3001	The psychological and social etiological explanation scale
3002	The scale of social restriction
3003	The scale of psychological understanding
3004	The psychological etiology explanation of health
3005	The psycho-biological etiology explanation of health
3006	The biological etiology explanation of health
3007	FAM scale; REL
3008	" " ?
3009	" " L
3010	" " Hs
3011	" " D
3012	" " Sc
3013	" " SOC
3014	" " HOS
3015	" " ES
3016	Age
3017	Sex: woman 2 p., man 1 p.
3018	Marital status: marriage or companionate marriage 2 p., single, widow, divorced 1 p.
3019	Number of children
3020	Job satisfaction I scale
3021	" " III "
3022	" " II "
3023	Years of teaching
3024	Size of school, number of teachers at the school: more than 20 teachers 5 p., 16-20 4 p, 10-15 3 p., 4-9 2 p., 1-3 p.
3025	Location of school: the big cities (Helsinki, Tampere, Turku) 5 p., the medium size cities (Espoo, Vantaa, etc.) 4 p., the small cities 3 p., densely populated areas 2 p., villages 1 p.
3026	How many schools has the teacher worked in?
3027	Changes in life
3028	An estimate of the mental health of the teacher
3029	Rorschach variable; R
3030	" " $\underline{T}/R$
3031	" " $\bar{x}$ (W-P)
3032	" " Σ S
3033	" " x m
3034	" " $\underline{F}$ %
3035	" " $\bar{x}$ C
3036	" " FC: (CF + C)

3037 Rorschach variable; ET
3038 " " EA
3039 " " x̄ K + k etc.
3040 " " Form.-Qual.
3041 " " GL
3042 " " H %
3043 " " x̄ (A-S)
3044 " " x̄ PD
3045 " " A %
3046 " " P %
3047 " " RI
3048 " " Σ 0 +
3049 " " Σ AT
3050 " " Σ Agg.
3051 " " Adapt. reg.
3052 " " Rep.
3053 " " Intell.
3054 " " Reg.
3055 " " Proj.
3056 " " Narc.

3086 Psychology studies
3087 Examinations taken
3088 Area of specialization
3089 The level taught: whole school 5 p., the senior high 4 p., upper level 3 p., middle level 2 p., the lowest classes (I-III) 1 p.
3090 Physical health of teacher
3091 Mean of grades in the high school leaving certificate
3092 Number of points in the matriculation examination
3093 Number of points in the obligatory subjects of the matriculation examination
3094 Grade in composition in the matriculation examination: laudatur 3 p., cum laude 2 p., approbatur 1 p.
3095 Mean of grades in the diploma from teacher's college
3096 Grade in teaching ability

6000 Dimension of productivity
6001 Dimension of inner harmony
6002 Dimension of mental disorder
6003 Dimension of spirituality vs. materiality
6004 Dimension of adaptive regression
6005 Dimension of etiological explanations of health
6006 Dimension of social adaptation
6007 Dimension of analytical vs. global perception

APPENDIX 2

AIMS OF THE SURVEY AND ITS COURSE

The aim of the present study is to map out what has happened to the comprehensive school teachers, to the teaching and to the students during the twenty years since you received your teacher's licence. - The final aim of the study is to develop the teaching of psychology, mental health and human relations in the teachers' colleges.

The study has two phases. It comprises an interview, a projective test and the following questionnaire. This test has been presented to you before, and this is now a follow-up. The aim of the interview is to map out how the teacher's position, the school as a working environment and the students have changed during there twenty years.

The aim of the questionnaire is to map out the kind of complementary education you have obtained and its usefulness, opinions of your work, knowledge of mental health, views about being a human being and about yourself.

Answer the following questions by marking the correct alternative with an X.

Have you taken the lowest course (approbatur) in psychology?

yes unfinished no

Have you taken the lowest course (approbatur) in special education?

yes unfinished no

Have you taken the lowest course (approbatur) in education?

yes unfinished no

What other courses have you taken at the university?

____

____

Which course or teaching has provided you with most knowledge or skills of mental health? ______________________

____

Which course or teaching has provided you with most knowledge of human relations and the handling of them? ____________

____

What kind of complementary education would you like to be offered in the fields mentioned above? ______________

____

APPENDIX 3

QUESTIONNAIRE OF ATTITUDES TOWARD MENTAL HEALTH AND ASSOCIATED ETIOLOGICAL EXPLANATIONS

This questionnaire is focused on your personal opinions about some questions concerning mental health. Answer what you really think, and don't stop to think of what is the general opinion or a socially acceptable answer. Encircle after each opinion the number of the alternative which best corresponds to your opinion.

The alternatives are:

- completely of the same opinion	6
- of the same opinion	5
- uncertain, but probably of the same opinion	4
- uncertain, but probably of a different opinion	3
- of a different opinion	2
- completely of a different opinion	1

1. There would be fewer mental disturbances, if people lived by the golden rule.

   1 2 3 4 5 6

2. One important need of the mentally disturbed is sound advice on how to lead their lives.

   1 2 3 4 5 6

3. The patients of a mental hospital should have something to say about the way they are treated there.

   1 2 3 4 5 6

4. To avoid mental disturbances you need to believe in something which is bigger and stronger than yourself.

   1 2 3 4 5 6

5. The needs of the mentally ill are always easy to observe.

   1 2 3 4 5 6

6. If individuals would try to help each other more, there would be fewer mental disturbances.

   1 2 3 4 5 6

7. It is easy to recognise someone who has once had a serious mental illness.

   1 2 3 4 5 6

8. Regardless of how you look at it, patients with mental illness' are no longer really human.

   1 2 3 4 5 6

9. Each personality has its own weak point and with the mentally ill this is even more likely.

   1 2 3 4 5 6

10. Always feeling guilty can be enough to cause the outburst of mental disturbances.

    1 2 3 4 5 6

11. If people would talk less and work more, everybody would be better off.

    1 2 3 4 5 6

12. Nowadays a person has to live pretty much for today and let tomorrow take care of itself.

    1 2 3 4 5 6

13. People with mental illness' should never be treated in the same hospital as people with physical illness'.

    1 2 3 4 5 6

14. A person who has bad manners, habits and breeding has not been taken proper care of and can hardly expect to get along with decent people.

    1 2 3 4 5 6

15. There would be less mental disturbances, if children had more respect for their parents.

    1 2 3 4 5 6

16. The way some people always blame themselves when things go wrong is sometimes enough to cause a nervous breakdown.

    1 2 3 4 5 6

17. Your choice of friends can have a lot to do with your becoming mentally disturbed or not.

    1 2 3 4 5 6

18. More tax money should be spent on the care and treatment of people with severe mental illness.

    1 2 3 4 5 6

19. Although some mental patients seem all right, it is dangerous to forget for a moment that they are mentally ill.

    1 2 3 4 5 6

20. Sometimes understanding friends are enough to prevent a nervous breakdown.

    1 2 3 4 5 6

21. It would be foolish to marry a person who has had a severe mental illness, even though he seems fully recovered.

    1 2 3 4 5 6

22. People who have been patients in a mental hospital will never be their old selves again.

1 2 3 4 5 6

23. An unhappy marriage can cause a normal person to have a nervous breakdown.

1 2 3 4 5 6

24. The way some people think about sex can lead to mental disturbances.

1 2 3 4 5 6

25. It is possible for strong feelings of worthlessness to develop into mental illness.

1 2 3 4 5 6

26. It is hardly fair to bring children into the world with the way the future looks.

1 2 3 4 5 6

27. Some people get mentally disturbed by thinking about sex all the time.

1 2 3 4 5 6

28. Mental illness is a price some people pay for immoral living.

1 2 3 4 5 6

29. Mental patients usually come from families with a long line of mental disturbances.

1 2 3 4 5 6

30. There would be fewer mental disturbances, if people paid more attention to each other.

1 2 3 4 5 6

31. Teachers are more likely to have mental disturbances than businessmen.

1 2 3 4 5 6

32. Not finding a good job can be enough to cause some people to have a nervous breakdown.

1 2 3 4 5 6

33. Living under constant threat of danger can cause severe mental illness in a person.

1 2 3 4 5 6

34. It is usually best to tell your superiors or bosses what they really want to hear.

1 2 3 4 5 6

35. It is hard to figure out who you can really trust.

1 2 3 4 5 6

36. Most people don't realize how much their lives are controlled by plots planned secretly by others.

1 2 3 4 5 6

37. The best way to handle patients in mental hospitals is to keep them behind locked doors.

1 2 3 4 5 6

38. It is possible to make life so difficult for yourself that you become mentally disturbed.

1 2 3 4 5 6

39. Many patients in mental hospitals make wholesome friendships with other patients.

1 2 3 4 5 6

40. Although patients discharged from mental hospitals may seem all right, they should not be allowed to marry.

1 2 3 4 5 6

41. People are born with different chances of becoming mentally disturbed.

1 2 3 4 5 6

42. Many mental patients are capable of skilled labor, even though in some ways they are very disturbed mentally.

1 2 3 4 5 6

43. There is little that can be done for patients in mental hospital except to see that they are comfortable and well fed.

1 2 3 4 5 6

44. Anyone who is in a hospital for mental illness should not be allowed to vote.

1 2 3 4 5 6

45. Every mental hospital should be surrounded by a high fence and guards.

1 2 3 4 5 6

46. If people obeyed God there would be fewer mental disturbances.

1 2 3 4 5 6

47. There is really little difference between those who are mentally ill and so-called normal people.

1 2 3 4 5 6

48. Every person should make a strong attempt to raise his social position.

1 2 3 4 5 6

49. Most women who were once patients in a mental hospital could be trusted as baby-sitters.

1 2 3 4 5 6

50. The mentally ill are very active and dangerous.

1 2 3 4 5 6

51. There is little use in writing to public officials, because they aren't really interested in the problems of the average man.

1 2 3 4 5 6

52. One of the main reasons for mental disturbances is moral slackness and weak will.

1 2 3 4 5 6

53. Obedience and respect for authority are the most important virtues children should learn.

1 2 3 4 5 6

54. The causes of mental disturbances, up to now, have been fairly unknown.

1 2 3 4 5 6

55. There is hardly anything lower than a person who does not feel great love, gratitude and respect for his parents.

1 2 3 4 5 6

56. People would not become mentally disturbed if they avoided bad thoughts.

1 2 3 4 5 6

57. Every person should have complete faith in some supernatural power whose decisions he obeys without question.

1 2 3 4 5 6

58. Mentally handicapped children are more disobedient than normal children.

1 2 3 4 5 6

59. The main task of the psychiatrist is to recommend different kinds of interest and comparable activities to the mentally disturbed so that they would have something to think about.

1 2 3 4 5 6

60. A person who is becoming mentally ill can be helped.

1 2 3 4 5 6

61. The brain of the mentally handicapped is smaller than that of a normal person.

1 2 3 4 5 6

62. The most important task of the psychiatrist is to solve the patient's problems.

1 2 3 4 5 6

63. A person who is close to having a nervous breakdown does not take good care of his clothing.

1 2 3 4 5 6

APPENDIX 4

MEANS AND DEVIATIONS OF ATTITUDE QUESTIONNAIRE ITEMS

v	1	2	3	4	5	6	7	8
$\bar{x}$	3.93	3.19	4.03	3.05	2.09	5.03	2.37	1.42
s	1.39	1.44	1.23	1.50	1.12	1.02	1.13	0.94
n	160	160	160	160	160	160	160	160
v	9	10	11	12	13	14	15	16
$\bar{x}$	4.57	5.02	2.53	2.55	3.21	2.53	2.88	4.21
s	1.28	1.09	1.33	1.52	1.35	1.18	1.33	1.15
n	159	160	160	158	160	160	160	160
v	17	18	19	20	21	22	23	24
$\bar{x}$	3.32	4.55	2.29	4.77	2.64	2.15	4.70	4.62
s	1.25	1.09	1.13	1.10	1.22	1.16	1.03	1.12
n	160	160	160	159	160	160	160	160
v	25	26	27	28	29	30	31	32
$\bar{x}$	5.03	2.03	3.50	2.81	3.54	4.96	2.82	4.30
s	0.83	1.10	1.31	1.38	1.15	0.97	1.14	0.99
n	160	159	160	159	160	159	159	159
v	33	34	35	36	37	38	39	40
$\bar{x}$	4.84	3.33	3.15	2.51	1.60	4.28	4.46	2.36
s	0.88	1.45	1.22	1.23	0.89	1.13	1.04	1.12
n	159	158	158	158	159	158	159	159
v	41	42	43	44	45	46	47	48
$\bar{x}$	4.49	4.72	2.09	1.54	1.31	2.74	4.23	2.07
s	1.21	0.86	1.18	0.80	0.66	1.64	1.28	0.93
n	159	160	160	160	160	160	159	160
v	49	50	51	52	53	54	55	56
$\bar{x}$	3.62	2.15	3.05	2.60	2.05	3.55	2.12	1.97
s	1.15	0.98	1.20	1.18	1.07	1.27	1.03	0.92
n	159	160	158	160	160	159	158	157
v	57	58	59	60	61	62	63	
$\bar{x}$	1.87	1.97	2.50	1.61	1.63	3.79	3.50	
s	0.99	1.12	1.38	0.97	0.86	1.46	1.38	
n	159	159	159	159	159	158	159	

APPENDIX 5

Intercorrelations of questionnaire items

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	1000																														
2	305	1000																													
3	-095	081	1000																												
4	335	310	003	1000																											
5	050	280	-110	115	1000																										
6	120	095	145	145	-280	1000																									
7	120	280	-175	185	325	-080	1000																								
8	015	015	[illegible]	030	105	-195	310	1000																							
9	140	-085	-095	115	-100	080	030	030	1000																						
10	030	-165	095	-080	-105	230	-245	-230	275	1000																					
11	255	290	[illegible]	300	145	-095	205	075	065	-070	1000																				
12	190	175	-085	235	105	075	130	100	-030	-085	190	1000																			
13	130	110	-190	-025	070	-015	085	130	085	115	100	140	1000																		
14	110	135	-295	100	195	030	195	205	025	-085	225	040	330	1000																	
15	310	205	-100	305	030	190	160	105	085	-030	405	135	100	290	1000																
16	-085	025	210	070	-075	100	-035	-195	-095	100	100	110	080	080	080	1000															
17	100	085	100	145	-080	135	100	-080	085	045	230	-085	135	025	205	410	1000														
18	045	015	230	075	-190	130	-125	-100	210	120	-140	-085	-080	-110	335	140	080	1000													
19	105	100	-115	-010	-080	-085	205	220	070	-035	205	-080	200	190	220	-075	180	-115	1000												
20	190	125	035	205	-110	240	085	-125	105	100	045	100	-035	-195	175	140	125	230	-150	1000											
21	145	-035	-200	-080	100	-080	225	210	110	090	085	030	220	335	110	-010	080	-135	200	-085	1000										
22	-015	045	-080	-010	175	-070	195	290	-080	-080	025	-085	175	200	085	-080	195	215	300	-280	330	1000									
23	085	-030	080	080	-150	300	-080	-080	220	105	030	145	150	115	085	100	190	200	-095	275	015	-120	1000								
24	020	-120	135	-125	-215	345	-130	100	080	175	-030	040	040	105	030	300	210	180	-005	100	030	-120	405	1000							
25	080	-020	140	-090	-375	475	-175	-200	200	325	-025	070	-145	-235	080	215	210	170	-145	375	-110	-290	400	500	1000						
26	135	080	-120	080	305	-100	245	100	-105	-085	085	245	115	105	-015	-030	-130	-110	300	-175	325	195	-080	125	-250	1000					
27	105	030	035	085	-040	085	-050	-080	-080	110	080	105	105	030	105	195	240	-085	075	040	085	-045	215	380	195	080	1000				
28	305	270	-085	305	130	-090	085	010	-040	015	105	100	110	105	200	-010	220	-030	290	001	220	040	075	030	040	140	290	1000			
29	240	145	095	210	-100	210	150	085	200	105	080	195	105	170	220	-080	140	040	080	105	275	080	175	080	095	-095	085	120	1000		
30	105	070	105	310	-105	[illegible]	085	-100	225	080	-040	195	-080	080	100	100	075	230	-280	335	-075	-300	330	295	300	-200	085	-075	230	1000	
31	095	-085	-010	010	-025	040	040	115	085	080	-010	-080	085	100	080	-080	070	080	145	-040	245	070	-080	-020	-110	085	035	080	240	-080	1000
32	-020	-075	070	120	-115	270	-010	-080	080	105	085	075	-080	-035	-010	240	330	270	-080	135	-080	-030	300	300	320	-100	240	-035	080	140	025
33	085	-025	075	190	-145	395	-105	-200	-020	205	085	040	035	-040	085	270	305	220	-095	295	-080	-130	400	300	300	-080	305	075	105	330	-025
34	105	315	100	205	200	-140	145	085	095	-025	105	145	085	010	115	080	080	130	100	280	120	-070	-085	-095	-125	190	030	075	070	045	-025
35	075	085	-040	095	105	-040	190	030	020	-080	125	195	135	010	190	105	230	-080	145	030	115	085	140	070	070	290	140	100	100	-080	-010
36	240	190	105	100	080	-085	085	080	085	-075	210	290	100	080	215	085	095	-095	130	070	175	295	085	-085	-085	210	130	210	190	-085	080
37	130	105	-100	030	170	-100	170	300	-005	-195	140	035	225	200	140	-080	005	-120	275	-175	375	300	-240	-295	-335	250	030	285	110	-295	100
38	235	140	045	285	090	235	025	-105	020	210	190	105	120	-080	125	230	205	125	-015	205	085	080	300	290	295	085	215	195	175	170	085
39	-020	120	215	080	005	005	-080	-200	085	080	-095	-080	-115	-170	095	130	085	205	-250	120	-125	-200	015	040	125	-090	115	-015	-035	190	-135
40	280	135	-190	105	080	-080	150	125	080	095	200	150	200	230	325	-085	085	-120	175	015	305	205	-075	-085	-070	120	080	220	230	-105	105
41	020	-080	-080	035	-045	-025	075	-010	200	085	080	050	140	010	110	085	120	-010	-080	085	045	-025	190	115	115	-140	105	085	270	015	130
42	-100	-015	215	090	-190	205	-030	-110	080	040	-075	080	020	-035	015	170	205	215	-150	280	-040	-130	280	105	240	-250	030	015	270	250	080
43	120	085	-020	120	175	-200	200	320	080	-235	175	025	030	090	150	-120	120	-135	330	-105	220	190	-120	-085	-100	280	-085	140	-075	-220	045
44	-000	170	-115	070	180	-190	085	105	015	-125	085	080	085	085	095	-075	-080	-105	215	-125	240	130	-145	-080	-125	220	120	-085	075	-200	110
45	130	185	-120	095	205	-295	225	370	040	-245	295	080	180	105	205	-080	-020	-120	335	-215	250	275	-180	215	-340	245	-001	220	030	-275	080
46	195	200	-120	305	120	105	255	125	-085	-130	310	380	155	150	450	095	100	-115	070	130	080	015	040	-070	-110	125	110	205	015	080	-015
47	015	-105	085	100	-300	245	-245	-110	085	-075	-225	030	-100	-080	-080	070	-085	285	-235	145	030	-085	105	130	170	-195	045	-090	145	240	015
48	070	200	030	195	080	-080	095	015	120	-305	310	070	100	180	330	115	175	[illegible]	085	080	040	040	-185	-080	-070	010	020	110	-020	010	080
49	-040	045	020	130	-085	050	-215	-210	090	090	-115	-005	-030	080	-115	-120	025	195	-240	080	-175	-280	100	-085	015	-100	110	040	040	145	-130
50	120	205	-155	055	230	-170	215	210	-090	-080	220	120	210	230	175	005	145	-180	300	-105	225	245	-105	-215	-200	180	000	280	-090	-215	035
51	030	-085	-135	080	105	-085	280	240	-025	-040	180	180	115	085	020	095	180	-075	070	-080	215	080	-080	-010	-000	310	195	090	-001	-080	105
52	345	310	-070	300	135	115	100	095	010	-020	185	270	190	250	370	080	280	-120	215	085	205	180	080	-150	-070	155	300	280	175	125	085
53	200	395	-180	240	280	-000	255	125	-010	-030	280	230	185	195	230	040	170	-080	235	045	230	225	-035	-095	-115	195	120	345	110	-005	085
54	-035	045	095	115	005	020	-080	-030	-045	070	045	180	035	035	040	040	-085	080	-095	080	-070	080	-070	080	080	040	005	-130	085	-020	-080
55	285	295	025	290	130	070	120	085	130	-020	200	175	105	310	450	020	005	025	145	-015	145	110	085	-080	-185	040	085	200	225	020	075
56	305	340	075	280	280	050	120	125	-180	-130	250	320	175	190	320	025	085	-090	180	-030	130	240	-080	-075	-180	205	145	310	075	005	030
57	280	275	-130	345	255	025	330	215	080	-120	410	170	125	255	380	-010	140	-185	285	-010	190	120	-110	-180	-170	185	055	180	065	-020	080
58	045	-035	085	130	-020	-105	095	120	110	-130	120	-005	000	080	140	080	105	-085	170	-090	135	135	-205	-070	-075	105	090	110	110	-100	125
59	220	400	090	175	100	-030	085	030	115	-025	275	070	150	130	250	040	055	-080	135	-040	-095	030	-140	-030	-015	080	080	080	070	010	-120
60	-035	-020	-085	105	030	-140	080	280	025	-070	035	070	090	070	085	-185	-080	-070	115	-130	155	080	-225	-130	-175	100	045	070	100	-215	135
61	155	180	-115	085	095	-100	135	130	-085	155	100	115	-010	070	110	-025	070	-180	205	-045	105	230	080	-030	-135	125	120	110	105	-170	080
62	100	055	145	095	-040	165	-045	-020	070	085	-100	080	080	-110	-095	220	080	210	-100	195	-120	-110	170	125	085	-030	-080	-025	080	200	195
63	070	-085	015	080	-110	170	085	-025	-030	045	080	095	-020	080	180	145	085	070	000	080	235	080	080	175	125	030	015	025	140	130	100

BEST COPY AVAILABLE

32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
1000																															
[illegible]	1000																														
[illegible]	[illegible]	1000																													
105	100	080	1000																												
-095	-070	-080	270	1000																											
-080	-205	080	015	215	1000																										
140	330	125	135	-080	-125	1000																									
065	085	095	080	-140	-160	105	1000																								
-065	-040	160	-035	200	280	155	-175	1000																							
080	105	-080	225	-030	-160	200	040	150	1000																						
290	200	-080	080	-030	-160	215	245	-080	220	1000																					
-140	-110	170	110	205	325	-120	-175	175	-084	-105	1000																				
-110	-220	105	-040	040	230	-050	-080	310	-075	-205	240	1000																			
-180	-300	160	001	180	510	-080	-220	205	-100	-200	040	080	1000																		
115	-095	105	075	195	180	115	-095	235	-010	-100	100	140	125	1000																	
105	110	-100	-075	-080	-110	130	130	090	160	305	-240	-100	-100	-020	1000																
040	-095	080	120	160	100	070	115	115	090	080	100	305	200	220	-030	1000															
230	145	-030	-100	-100	-105	080	210	-100	-090	195	-200	-085	-170	-020	280	001	1000														
-040	-100	135	085	180	490	-195	-085	200	-170	-140	315	170	300	230	-205	200	-135	1000													
040	-010	120	220	200	080	115	-105	215	090	-095	235	230	275	195	-045	045	-180	205	1000												
080	045	145	190	280	280	180	-020	230	-035	001	205	085	205	420	-130	325	110	400	070	1000											
-030	-080	145	170	240	245	140	095	250	010	-030	105	085	105	490	-170	275	-080	280	030	500	1000										
080	-055	090	075	080	015	-080	080	025	-090	085	085	185	-020	015	140	015	-015	-340	080	-085	-030	1000									
-090	-085	120	075	185	280	080	045	210	-085	-100	070	130	255	375	-040	370	080	200	-080	640	400	035	1000								
-130	-130	280	015	215	190	105	-040	225	-140	-140	120	135	255	380	-070	145	-040	240	110	380	475	080	410	1000							
-050	-195	195	185	200	320	030	-080	200	-045	-175	225	210	370	490	-100	290	-075	335	195	410	450	-080	490	380	1000						
085	-135	040	010	-010	220	-105	-040	225	-095	-050	205	240	180	300	-015	205	-180	280	025	280	210	080	290	190	225	1000					
-085	-080	240	080	140	075	-015	130	145	-030	-130	110	180	140	045	-230	245	-085	300	010	275	105	080	310	280	330	120	1000				
-150	-250	025	-110	050	430	-235	-100	250	-140	-145	295	415	275	125	080	080	095	250	145	180	140	145	165	115	105	100	030	1000			
040	-135	-045	015	140	175	-020	-120	115	-110	-105	210	245	250	085	-180	085	-100	170	020	245	200	115	125	205	225	105	165	085	1000		
085	100	085	-080	055	-055	120	050	-095	015	100	-035	-080	-085	-035	-035	080	-090	-030	070	-030	-090	-010	-005	-045	-080	-140	-015	-080	-180	1000	
010	100	-015	110	080	-080	080	-075	030	-110	045	020	-035	-130	-015	080	030	-125	315	110	025	-095	170	110	-010	-080	095	-080	-015	080	110	1000

BEST COPY AVAILABLE

APPENDIX 6

MENTAL HEALTH ATTITUDES: UNROTATED FACTOR MATRIX

	I	II	III	IV	V	VI
1	0.33	0.40	-0.08	0.02	0.10	-0.33
2	0.39	0.27	-0.40	-0.09	0.07	-0.01
3	-0.25	0.15	-0.18	0.04	-0.32	0.17
4	0.28	0.42	-0.26	0.14	0.16	0.21
5	0.41	-0.13	-0.18	-0.29	0.13	0.11
6	-0.26	0.53	0.07	0.17	0.08	-0.07
7	0.23	0.03	0.05	-0.18	0.30	0.12
8	0.42	-0.19	0.19	0.09	0.23	0.17
9	-0.04	0.22	0.09	0.28	0.11	0.03
10	-0.25	0.25	0.19	0.03	-0.08	-0.14
11	0.54	0.27	0.09	-0.18	0.06	-0.04
12	0.25	0.30	-0.08	-0.07	0.18	0.27
13	0.31	0.12	0.20	-0.02	0.07	-0.18
14	0.41	0.04	0.13	0.16	0.17	-0.28
15	0.45	0.44	-0.10	0.08	0.08	-0.18
16	-0.11	0.38	0.07	-0.21	-0.24	0.08
17	0.10	0.45	0.18	-0.18	0.28	-0.10
18	-0.30	0.25	-0.08	0.18	-0.09	0.22
19	0.46	-0.03	0.27	-0.09	-0.06	-0.15
20	-0.19	0.50	-0.14	0.09	0.19	0.17
21	0.41	0.04	0.47	0.11	0.12	-0.03
22	0.36	-0.14	0.27	0.01	-0.03	-0.18
23	-0.27	0.50	0.21	-0.08	0.10	0.09
24	-0.30	0.44	0.35	-0.16	-0.21	0.10
25	-0.43	0.50	0.18	-0.08	-0.13	0.07
26	0.41	-0.11	0.14	-0.26	0.02	0.28
27	0.08	0.35	0.21	-0.17	-0.32	-0.01
28	0.39	0.30	0.03	-0.08	-0.10	-0.21
29	0.13	0.37	[illegible]	0.32	0.20	0.00
30	-0.27	0.54	[illegible]	0.19	0.27	0.12
31	0.15	0.03	0.31	0.21	0.08	-0.01
32	-0.19	0.42	0.18	-0.02	-0.20	0.07
33	-0.32	0.51	0.17	-0.18	-0.02	-0.10
34	0.25	0.18	-0.21	-0.10	0.04	0.32
35	0.16	0.21	0.20	-0.31	0.03	0.03
36	0.36	0.17	0.12	-0.08	0.05	0.05
37	0.59	-0.17	0.20	0.22	-0.09	-0.02
38	-0.05	0.53	0.10	-0.20	0.08	0.03
39	-0.22	0.20	-0.32	-0.05	-0.17	0.04
40	0.45	0.14	0.22	0.22	0.09	0.03
41	-0.08	0.22	0.21	-0.03	0.19	-0.09
42	-0.25	0.36	0.06	0.14	0.01	0.01
43	0.49	-0.14	0.12	-0.08	-0.10	0.29
44	0.39	-0.14	0.12	0.15	-0.18	0.31
45	0.53	-0.21	0.07	0.04	-0.08	0.14
46	0.44	0.31	-0.18	0.01	0.09	0.03
47	-0.30	0.21	0.09	0.41	-0.03	0.39
48	0.33	0.20	-0.21	0.37	-0.19	-0.06
49	-0.22	0.14	-0.24	0.23	-0.12	-0.09
50	0.58	-0.34	-0.00	-0.09	-0.18	-0.06
51	0.28	0.02	0.27	-0.21	0.06	0.34
52	0.53	0.42	-0.09	0.03	-0.15	-0.18
53	0.58	0.32	-0.17	-0.03	-0.08	-0.19
54	0.03	0.05	0.00	0.12	-0.13	0.26
55	0.49	0.30	-0.23	0.24	-0.06	-0.18
56	0.52	0.22	-0.22	-0.04	-0.07	0.04
57	0.52	0.13	-0.16	0.03	0.02	0.01
58	0.33	-0.00	0.06	0.30	-0.35	0.29
59	0.36	0.15	-0.31	-0.09	-0.14	-0.03
60	0.36	-0.19	0.10	0.43	-0.28	0.25
61	0.36	0.00	0.09	-0.01	-0.13	-0.02
62	-0.13	0.17	0.00	-0.03	0.07	0.25
63	0.00	0.19	0.22	0.02	0.05	0.09
Eigenvalues	7.96	5.21	2.29	1.73	1.44	1.39
Percent of total variance	12.8	8.3	3.6	2.7	2.3	2.2
Cumulative percents	12.6	20.9	24.5	27.2	29.5	31.7

APPENDIX 7

VARIMAX SOLUTION - 4 FACTORS

	I	II	III	IV	h^2
1	0.46	0.09	0.18	0.10	0.27
2	0.61	-0.08	-0.06	-0.08	0.39
3	-0.01	-0.32	0.08	0.05	0.11
4	0.54	-0.09	0.08	0.20	0.34
5	0.32	0.19	-0.22	-0.35	0.31
6	0.08	-0.24	0.48	0.31	0.38
7	0.30	0.31	-0.02	-0.17	0.22
8	0.09	0.45	-0.20	0.06	0.26
9	0.03	-0.01	0.15	0.34	0.14
10	-0.14	-0.09	0.35	0.12	0.16
11	0.51	0.19	0.09	-0.12	0.32
12	0.38	0.04	0.15	-0.01	0.17
13	0.18	0.32	0.11	0.04	0.15
14	0.23	0.35	-0.06	0.17	0.21
15	0.59	0.13	0.15	0.17	0.42
16	0.11	-0.10	0.42	-0.10	0.21
17	0.22	0.10	0.46	-0.02	0.27
18	-0.05	-0.30	0.20	0.21	0.18
19	0.18	0.51	0.01	-0.08	0.30
20	0.20	-0.34	0.35	0.20	0.32
21	0.07	0.60	0.12	0.17	0.40
22	0.06	0.49	-0.09	0.00	0.25
23	-0.01	-0.14	0.59	0.09	0.37
24	-0.13	-0.05	0.64	0.02	0.43
25	-0.11	-0.27	0.61	0.10	0.47
26	0.17	0.41	-0.06	-0.28	0.28
27	0.15	0.13	0.39	-0.05	0.20
28	0.42	0.22	0.16	-0.02	0.25
29	0.16	0.15	0.27	0.43	0.30
30	0.17	-0.42	0.38	0.30	0.43
31	-0.04	0.30	0.07	0.24	0.16
32	0.01	-0.09	0.47	0.12	0.24
33	-0.02	-0.20	0.62	-0.01	0.42
34	0.37	-0.01	-0.02	-0.09	0.14
35	0.14	0.21	0.31	-0.22	0.21
36	0.28	0.29	0.11	-0.02	0.18
37	0.21	0.56	-0.26	0.18	0.46
38	0.21	-0.08	0.53	-0.04	0.33
39	0.12	-0.42	0.08	-0.03	0.19
40	0.27	0.42	0.03	0.27	0.32
41	-0.04	0.05	0.30	0.05	0.10
42	-0.04	-0.24	0.35	0.24	0.24
43	0.21	0.45	-0.17	-0.10	0.28
44	0.13	0.38	-0.20	0.12	0.21
45	0.29	0.51	-0.31	-0.02	0.44
46	0.56	0.10	0.03	0.05	0.32
47	-0.16	-0.20	0.17	0.46	0.31
48	0.43	0.03	-0.05	0.08	0.20
49	0.03	-0.35	-0.02	0.23	0.18
50	0.39	0.40	-0.17	-0.10	0.35
51	0.08	0.39	0.13	-0.17	0.20
52	0.63	0.21	0.13	0.11	0.46
53	0.65	0.20	0.01	0.02	0.47
54	0.04	0.01	0.00	0.12	0.02
55	0.60	0.09	-0.08	0.26	0.44
56	0.58	0.14	-0.07	-0.02	0.36
57	0.60	0.26	-0.11	0.04	0.44
58	0.18	0.25	-0.15	0.28	0.20
59	0.48	-0.01	-0.11	-0.10	0.26
60	0.09	0.33	-0.31	0.37	0.35
61	0.21	0.30	-0.06	-0.01	0.14
62	0.01	-0.12	0.18	0.02	0.05
63	-0.01	0.12	0.25	0.09	0.09
Eigenvalues	5.80	4.98	4.44	1.97	17.19
Percent of total variance	9.2	7.9	7.0	3.2	27.3
Cumulative percents	9.2	17.1	24.1	27.3	

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APPENDIX 8

LIST OF HEALTH DISORDERS

64-66. In your opinion which of the following symptoms or states of disturbances depend mainly on psychic causes, biological causes or both?

	psychic causes		both psychic and biological causes	biological causes	
	only 2 p	often 1 p	1 p	often 1 p	only 2 p
1. headache					
2. stomachache					
3. pain in the heart or chest					
4. cutaneous eruption					
5. difficulties in breathing					
6. circulation disturbances					
7. mental deficiency					
8. gastric ulcer					
9. tuberculosis					
10. paralysis of the heart					
11. heart rhythm disturbance					
12. cancer					
13. mental illness					
14. epilepsy					
15. neurosis					
16. psychopathy					
17. backache					
18. rheumatoid arthritis					
19. tumor of the brain					

APPENDIX 9

THE FAM TEST ITEMS

In the following form there is a group of statements. If a statement's true, mark the alternative "yes" with an X, otherwise mark the is "no". If you find it insuperably difficult to decide, choose the question mark. Try to avoid the question mark, because too many of them will diminsh the reliability of the results.

yes no ?

67. I have a good appetite. ....

68. I wake up fresh and rested most mornings. ....

69. I think I would like the work of a librarian. (R) ....

70. My daily life is full of things that keep me interested. (L) ....

71. I am about as able to work as I ever was. (L) ....

72. I work under a great deal of tension. (R) ....

73. Once in a while I think of things too bad to talk about. (L) ....

74. My father was a good man. (L) ....

75. I am very seldom troubled by constipation. (L) ....

76. When I take a new job, I like to be tipped off on who should be gotten next to. (R) ....

77. At times I have wanted to leave home very much. (R) ....

78. I am troubled by attacks of nausea and vomiting. (R) ....

79. No one seems to understand me. (R) ....

80. I would like to be a singer. (R) ....

81. At times I feel like swearing. (L) ....

yes no ?

82. I find it hard to keep my mind on a task or job. (R) ....

83. I have had very peculiar and strange experiences. (R) ....

84. If people had not had it in for me I would have been much more successful. (R) ....

85. During one period when I was a youngster I engaged in petty thievery. (R) ....

86. At times I feel like smashing things. (R) ....

87. Most any time I would rather sit and daydream than to do anything else. (R) ....

88. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going". (R) ....

89. My sleep is fitful and disturbed. ....

90. Much of the time my head seems to hurt all over. (R) ....

91. When I am with people I am bothered by hearing very queer things. (R) ....

92. I am in just as good physical health as most of my friends. ....

93. I am liked by most people who know me. (L) ....

94. As a youngster I was suspensed from school one or more times for cutting up. (R) ....

95. I am a good mixer. (L) ....

96. Everything is turning out just like the prophets in the Bible said it would. ....

97. I do not read every editorial in the newspaper every day. (L) ....

yes no ?

98. I have not lived the right kind of life. (R) ....

99. I sometimes keep on at a thing until others lose their patience with me. ....

100. I loved my father. (L) ....

101. I wish I could be as happy as others seem to be. (R) ....

102. I am very strongly attracted by members of my own sex. (R) ....

103. I have often wished I were a girl. (Or if you are a girl) I have never been sorry that I am a girl. (R) ....

104. I get angry sometimes. (L) ....

105. Most of the time I feel blue. (R) ....

106. I like poetry. (R) ....

107. My feelings are not easily hurt. (L) ....

108. I think I would like the kind of work a forest ranger does. (R) ....

109. I am easily downed in an argument. (R) ....

110. Any man who is able and willing to work hard has a good chance of suceeding. (L) ....

111. I am certainly lacking in self-confidence. (R) ....

112. I would like to be a florist. (R) ....

113. I usually feel that life is worth living. (L) ....

114. It takes a lot of argument to convince most people of the truth. (R) ....

115. I would like to be a nurse. (R) ....

yes no ?

116. I think most people would lie to get ahead. (R) ....

117. I do many things which I regret afterwards (I regret things more or more often than others seem to). (R) ....

118. At times I have a strong urge to do something harmful or shocking. (R) ....

119. I believe in the second coming of Christ. (L) ....

120. I like parties and socials. (L) ....

121. My hardest battles are with myself. (R) ....

122. I have little or no trouble with my muscles twitching or jumping. (L) ....

123. Sometimes when I am not feeling well I am cross. (L) ....

124. I am happy most of the time. (L) ....

125. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right. (R) ....

126. I believe in a life hereafter. (L) ....

127. Most people are honest chiefly through fear of being caught. (R) ....

128. My speech is the same as always (not faster or slower, or slurring; no hoarseness). (L) ....

129. My table manners are not quite as good at home as when I am out in company. (L) ....

130. I believe I am being plotted against. (R) ....

131. I believe I am being followe. (R) ....

yes no ?

132. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it. (R) ....

133. I have a great deal of stomach trouble. (R) ....

134. I like dramatics. (R) ....

135. I like collecting flowers or growing house plants. (R) ....

136. At times my thoughts have raced ahead faster than I could speak them. (L) ....

137. I believe that my home life is as pleasant as that of most people I know. (L) ....

138. I certainly feel useless at times. (R) ....

139. When I was a child I belonged to a group or a gang that tried to stick together through thick and thin. (R) ....

140. I would like to be a soldier. (R) ....

141. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working at something important. (R) ....

142. During the past few years I have been well most of the time. (L) ....

143. I feel that I have often been punished without cause. (R) ....

144. I cannot understand what I read as well as I used to. (R) ....

145. I have never felt better in my life than I do now. ....

146. I am not afraid to handle money. (L) ....

147. What others think of me does not bother me. (L) ....

yes no ?

148. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things. (R) ....

149. I frequently have to fight against showing that I am bashful. (R) ....

150. I seldom or never have dizzly spells. (L) ....

151. My memory seems to be all right. (L) ....

152. I am worried about sex matters. (L) ....

153. I find it hard to make small talk when I meet new people. (R) ....

154. I am against giving money to beggars. (R) ....

155. I commonly hear voices without knowing where they come from. (R) ....

156. My hearing is apparently as good as that of most people. (L) ....

157. I feel weak all over much of the time. (R) ....

158. I have very few headaches. (L) ....

159. I have had no difficulty in keeping my balance in walking. (L) ....

160. I have had attacks in which I could not control my movements or speech but in which I knew what was going on around me. (R) ....

161. I do not like everyone I know. (L) ....

162. Someone has been trying to rob me. (R) ....

yes no ?

163. There are persons who are trying to steal my thoughts and ideas. (R) ....

164. I wish I were not so shy. (R) ....

165. I believe I am a condemned person. (R) ....

166. At times it has been impossible for me to keep from stealing or shoplifting something. (R) ....

167. I have used alcohol excessively. (R) ....

168. There is very little love and companionship in my family as compared to other homes. (R) ....

169. I frequently find myself worrying about something. (R) ....

170. It does not bother me particularly to see animals suffer. (R) ....

171. I think I would like the work of a bulding contractor. (R) ....

172. I loved my mother. (L) ....

173. I gossip a little at times. (L) ....

174. Some of my family have habits that bother and annoy me very much. (R) ....

175. I hardly ever notice my heart pounding and I am seldom short of breath. (L) ....

176. I like to talk about sex. (R) ....

177. I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing. (R) ....

yes no ?

178. I have periods of such great restilessness that I cannot sit long in a chair. (R) ....

179. My parents and family find more fault with me than they should. (R) ....

180. My neck spots with red often. (R) ....

181. I believe there is a Devil and a Hell in afterlife. (L) ....

182. No one cares much what happens to you. (R) ....

183. I like to be with a group who play jokes on one another. (L) ....

184. Sometimes at elections I vote for men about whom I know very little. (L) ....

185. I usually expect to succeed in things I do. (L) ....

186. I believe there is a God. (L) ....

187. I have difficulty in starting to do things. (R) ....

188. If I were an artist I would like to draw flowers. (R) ....

189. It does not bother me that I am not better looking. (L) ....

190. I sweat very easily even on cool days. (R) ....

191. It is safer to trust nobody. (R) ....

192. When in a group of people I have trouble thinking of the right things to talk about. (R) ....

193. When I get bored I like to stir up some excitement. (R) ....

194. I can easily make other people afraid of me, and sometimes do for the fun of it. (R) ....

195. I do not blame a person for taking advantage of someone who lays himself open to it. (R) ....

196. At times I am all full of energy. (L) ....

197. My eyesight is as good as it has been for years. (L) ....

198. Someone has control over my mind. (R) ....

199. I have often felt that strangers were looking at me critically. (R) ....

200. I drink an unusually large amount of water every day. (R) ....

201. Most people make friends because they are likely to be useful to them. (R) ....

202. I do not often notice my ears ringing or buzzing. (L) ....

203. I am sure I am being talked about. (R) ....

204. Once in a while I laugh at a dirty joke. (L) ....

205. I have very few fears compared to my friends. (L) ....

206. I am always disgusted with the law when a criminal is freed though the arguments of a smart lawyer. (L) ....

207. I am likely not to speak to people until they speak to me. (R) ....

208. Someone has been trying to influence my mind. (R) ....

209. I have never been in trouble with the law. (L) ....

210. I have periods in which I feel unusually cheerful without any special reason. (L) ....

211. Even when I am with people I feel lonely much of the time. (R) ....

212. I think nearly anyone would tell a lie to keep out of trouble. (R) ....

213. I am more sensitive than most other people. (R) ....

214. Most people inwardly dislike putting themselves out to help other people. (R) ....

215. I have never been paralyzed or had any unusual weakness of any of my muscles. (L) ....

216. I cannot keep my mind on one thing. (R) ....

217. I have certainly had more than my share of things to worry about. (R) ....

218. Most of the time I wish I were dead. (R) ....

219. I often feel as if things were not real. (R) ....

220. I have strange and peculiar thoughts. (R) ....

221. I have been afraid of things or people that I knew could not hurt me. (R) ....

222. I have more trouble concentrating than others seem to have. (R) ....

223. Almost every day something happens to frighten me. (R) ....

224. If given the chance I could do some things that would be of great benefit to the world. (R) ....

225. I enjoy the excitement of a crowd. (L) ....

226. I tend to be interested in several different hobbies rather than to stick to one of them for a long time. (L) ....

227. When I am feeling very happy and active, someone who is blue or low will spoil it all. (R) ....

228. I feel unable to tell anyone all about myself. (R) ....

229. Lightning is one of my fears. (R) ....

230. I have often felt badly over being misunderstood when trying to keep someone from making a mistake ....

231. The future is too uncertain for a person to make serious plans. (R) ....

232. Often, even though everything is going fine for me, I feel that I don't care about anything. (R) ....

APPENDIX 10

INTERCORRELATIONS AND ALPHAS OF FAM SCALES WITH NORMAL MATERIAL

Correlations between the various FAM scales and the Cronback alphas of these scales with normal Finnish men (N=572)

Scales

Name	L	Hs	D	Sc	SOC	HOS	ES	alpha
L								.51
Hs	-05							.74
D	-08	.62^{xxx}						.59
Sc	-26^{xxx}	.66^{xxx}	.55^{xxx}					.85
SOC	-14^{xx}	.18^{xxx}	.36^{xxx}	.30^{xxx}				.67
HOS	-25^{xxx}	.29^{xxx}	.18^{xxx}	.52^{xxx}	.31^{xxx}			.68
ES	.18^{xxx}	-.61^{xxx}	-.51^{xxx}	-.68^{xxx}	.33^{xxx}	-.36^{xxx}	-	.53

Correlation between the various FAM scales and the Cronbach alphas of these scales with normal Finnish women (N=506)

Scales

Name	L	Hs	D	Sc	SOC	HOS	ES	alpha
L								.49
Hs	.03							.52
D	-.02	.32^{xxx}						.48
Sc	-.21^{xxx}	.47^{xxx}	.47^{xxx}					.78
SOC	.01	.06	.26^{xxx}	.25^{xxx}				.63
HOS	-.17^{xxx}	.15^{xxx}	.09^{x}	.32^{xxx}	.16^{xxx}			.65
ES	.01	-.39^{xxx}	-.38^{xxx}	-.41^{xxx}	.25^{xxx}	-.31^{xxx}	-	.34

Level of significance (two-tailed test)

x	$p < 0.5$
xx	$p < 0.2$
xxx	$p < 0.1$

APPENDIX 11

FAM SCALES IN THIS SURVEY

REL scale (nr. 3007): items nr. (yes responses) 96,119, 126, 186.

? scale (nr. 3008) : sum of question responses.

L scale (nr. 3009): items nr. (no responses) 73,81, 97, 104, 123, 129, 161, 173, 184, 204.

Hs scale (nr.3010): items nr. (yes responses) 78, 89, 133, 157, (no responses) 67, 71, 75, 92, 122, 142, 150, 159, 175.

D scale (nr. 3011): items nr. (yes responses) 72, 82, 88, 89, 111, 138, 144, 157, 187, (no responses) 67, 70, 71, 95, 113, 124, 142, 145, 151, 210.

Sc scale (nr. 3012): items nr. (yes responses) 73, 77, 82, 83, 87, 88, 105; 118, 130, 143, 144, 152, 178, 187, 211, 216, 218, 219, 220, 221, 222, 223.

SOC scale (nr. 3013): items nr. (yes responses) 148, 149, 153, 164, 192, 207, (no responses) 95, 120.

HOS scale (nr. 3014):items nr. (yes responses) 76, 116, 127, 132, 141, 174, 182, 191, 199, 201, 203, 214.

ES scale (nr. 3015) : items nr. (yes responses) 67,159, (no responses) 82, 83, 109, 117, 157, 169, 220.

APPENDIX 12

RORSCHACH VARIABLES, THEIR MEANS, DEVIATIONS, AND COMMUNALITIES IN THE FRONTIER GUARD SURVEY

The means, deviations, and communalities obtained in the 1980 survey of frontier wards for the variables chosen into the present study. The subject group comprised 110 frontier wards. The age of the subjects varied between 25 and 31 yrs.

	Variable	Mean	Deviation	h^2I	h^2II
3029	(61) R	14.7	6.5	.79	.80
3030	(64) T/R	45.7	20.6	.45	.58
3031	(76) $\bar{x}$ (W-P)	2.5	0.5	.58	.70
3032	(81) Σ S	0.6	0.3	.29	.25
3033	(82) $\bar{x}$ m	0.9	0.5	.75	.79
3034	(86) F%		16.8	.71	.80
3035	(89) $\bar{x}$ C	0.6	0.4	.14	.24
3037	(92) ΣT	9.6	1.5	.56	.63
3039	(94) $\bar{x}$ c	3.7	1.8	.22	.28
	(95) $\bar{x}$ K + k etc.	1.9	1.6	.42	.39
3040	(96) Form.-Qual.	15.5	3.0	.41	.41
3041	(97) GL	3.5	0.5	.75	.79
3042	(104) H%	19.7	12.1	.76	.74
3043	(106) $\bar{x}$ (A-S)	2.9	0.7	.21	.30
3044	(107) $\bar{x}$ (PD)	2.6	1.1	.24	.34
3045	(102) A%	41.8	12.4	.79	.82
3046	(98) P%	41.2	15.1	.65	.72
3047	(109) RI	5.0	1.8	.25	.45
3048	(100) Σ O+	0.6	1.1	.68	.71
3049	(116) Σ AT	0.9	1.1	.33	.33
3050	(113) Σ Agg.	7.8	7.4	.35	.43
3051	(122) Adapt.Reg.	21.0	14.1	.46	.56

I Factor analysis included self-reports, and variables of the Wartegg and WAIS tests in addition to Rorschach variables.

II Factor analysis only included Rorschach variables.

The items selected into the scale of defensiveness received high communalities in the frontier ward survey (.26 - .92). Only three of these items acquired communalities below .30.

APPENDIX 13

RORSCHACH TEST'S VARIABLES AND THEIR SCORING IN THIS SURVEY.

3029	R	The number of responses; only the classifiable responses are taken into account, not the descriptions.
3030	T/R sek	The total time for each table is divided the number of responses.
3031	$\bar{x}$(W-P)	The area used in the interpretation: the pattern of the table with its background has been used in its entirety minutely and including the details 4 p., the pattern has been used in its entirety (ordinary whole response) 3 p., approximately 2/3 of the pattern is used (W-responses as e.g. the III table: two women lifting something) 2 p., D- or detail responses 1 p., Dd-, Dr- or dd-responses 0 p. The sum of responses from the ten tables is divided by the number of responses. No such descriptions are taken into account which have not been classified as ordinary responses. The scoring is a modification of Zubin et al. (1965, p. 354).
3032	ΣS	The use of the white area: the response bases solely on the white area 4 p., the white area covers a great deal of the response 3 p., the white area is a small part of the response 2 p., the white area is used as a background, e.g. the interpretation "an island" 1 p. (Zubin et al. 1965, p. 347).
3033	$\bar{x}$ m · 10	The scoring of the movement responses is carried out according to Zubin et al. (1965, p. 343). Active movement: plays, talks, dances, waves his hands etc. 4 p., an excited position: lifts, bows, smiles etc. 3 p., static position: stands, sits, lies etc. 2 p., Enforced movement: it drops etc. 1 p. In the following a mean is used which is multiplied by 10.
3034	F %	The F % is calculated of pure form responses according to Klopfer (1954, pp. 95-100).
3035	$\bar{x}$ C 10	The scoring of color responses is based on Zubin et al. (1965, pp. 332-333). The response is based solely on color 4 p., the color is more dominating than the form, e.g. flower interpretations 3 p., color has been used, but form is dominating 2 p., the use of color is revealed in the questiong session, or it is forced 1 p.
3036	FC: (CF + C)	The relation between form and color $10 \cdot \left[\frac{FC}{CF + C}\right]$

3037	ET	The experience balance is calculated according to Klopfer (1954, p. 243) using in addition the formula of Palmer (1956). $\left\{\frac{10\cdot\left[M - (1/2\ FC + CF + 1\ 1/20)\right]}{R}\right\} + 10$
3038	EA	The two halves of the experience balance are added together, according to Beck & Molish (1967).
3039	$\bar{x}$ K,k,c,C''10	The shading and surface responses (which include K, k+c+C' quality either with form or without). The mean is multiplied 10.
3040	Form-Qual.	The number of form dominated responses - the number of quality dominated responses $\left\{\frac{10\cdot\left[(F+FC+Fm+M+FK+Fk+Fc)-(K+KF+k+kF+c+cF\ \text{etc.})\right]}{R}\right\} + 10$
3041	GL	Genetic level according to Becker (1956).
3042	H %	The H % is calculated of all human, human like and corresbonding detail responses. (Vide Klopfer et al. 1954, p. 200.)
3043	$\bar{x}$ (A-S)	Ascendance - submission scale according to Zubin et al. (1965, p. 351) is divided by the number of responses of which it is formed; if there is no such interpretation 0 p. 4 p. a remarkably dominant and independent figure: a king, a giant, a man of power, general etc. 3 p. rather dependent or dominating people: a man carrying a burden on a hill, a man crossing an obstacle, a man winning, an old man. If there is a fight or strife, one has to consider whether it is scored here or in aggressive content, or both. 2 p. ordinary people, not especially submissive. 1 p. human figures whose general attitude is passive, helpless or dependent: children, a woman with hands elevated to prayer or who is asking for help etc. 0 p. the human figures are especially weak, submissive, helpless, in need of support, e.g. a newborn, a helpless old-aged person, human figures under the influence of outer, overwhelming forces, e.g. the forces of nature.

3044 $\bar{x}$ PD

Personal closeness - distance: sociability according to Zubin et al. (1965, p. 352) divided by the number of responses of which it is formed; if there is no such interpretation 0 p.

(social, spatial, temporal closeness - distance)

Estimate the subject's relation to the interpreted people, animals and things.

4 p. a man of the present day who is adequate as a target for identification.

3 p. people from different historical periods, people of different race or different social status or of different sex than the subject.

2 p. human being, animals, things from different geological phases: a Neanderthal man, a pre-historical thing, human figures etc.

1 p. mythological figures, especially the figures in stories: Alice in Wonderland, witches, fairies, angels, dragons, snowmen etc.

0 p. caricatures, drawings, statues.

3045 A %

The A % is calculated from the number of animal responses: the fur interpretations are not taken into account. (Vide Klopfer et al. 1954, p. 314).

3046 P %

The classification of the P-responses has been done according to the results of C-E Mattlar et al. (1978, p. 33).

I	1. W W̸	A rat, a butterfly or bird (61)
II	2. W W̸ or D6 (+D3)	Two Santa Claus' or human beings (20)
	3. W W̸ or D6 (+D3)	Two bears, dogs or puppies (24)
III	4. W W̸	Two human beings (of the same sex), also drawings of these (79)
	5. D7	Utensils (a kettel, a bag, a paper bag, drums, a water basin, a basket, a pot, a flower pot, a travel bag) (18)
IV	6. W W̸	A fur, a skin (32)
	7. W W̸	A holocaust, a giant, a human being, a snow man etc. but not an animal, a bear, a gorilla (30)
V	8. W W̸	A bat, a butterfly, a bird (82)
VI	9. W W̸ or D1: a fur, a skin (49)	

VII	10. D2, W	Two people, H or (H) (24)
	11. D2, W	Two animals, dogs or rabbits (24)
VIII	12. D1	Any animal with four feet (76)
IX		-
X	13. D1	Any animal with several legs (a crayfish, a spider, a blackfish etc.) (17)

The locations are according to Small.

3047 RI Neiger's reality index. Vide E.Bohm (1960, p. 24).

1. each common human movement response (W, W) in the third table (people, monkeys, devil etc. but not a skeleton, figure nor form responses).

2. a bat in the fifth table.

3. each popular animal response on the sides of the eighth table.

4. each animal response in the tenth table, whether popular or not.

If a reality response is given as a first response to a table, the subject obtains 2 p. If in the fifth table a butterfly response is given before a bat response, then 2 p. is given for the bat response.

3048 O+ Orig. + sum. The responses which are given by fewer subjects than one in a hundred and which have a good form level.

3049 Σ At Anatomy responses.

3050 Σ Agg. Aggressive contents. The sum of oral-aggressive, Aggressive and results of aggression contents. They are scored according to the rules given following. The rules have been constructed according to the publications of Elizur (1949), Goldfried et al. (1971, p. 89-116), Holt & Havel (1960), Holt (1978, p. 211-224, 249-330) and Zubin et al. (1965, p. 578).

Aggressive_contents:

5 p. living sadistic phantasies

4-5 p. a primitive destruction of the object the end results of a sadistic and aggressive action

5 p. rotten meat

4 p. destroyed persons, animals, vegetables and things

3 p. a nightmare-like helplessness explosions,
erupting vulcanos etc.

2-3 p. fire

2 p. a fight, aggressive actions
a vulcano which does not erupt ghosts,
witches, giants, dragons etc.
skeletons, skulls etc.
men and animals ready for an attack
frightening or potentially dangerous
animals and men, parts of human
beings or animals a devil, the satan
Mephistopheles etc.
abstract or theological threats and
concepts of aggression weapons
hatred, aggressive affects and mimicry
of the face
crime and criminals

The targets of aggression:

3-2 p. the victims of active aggression

2 p. suffering men or animals scared or
threatened men and animals

1 p. men or things which are being threatened
sheltering things or actions, a prison

3051 $\bar{x}$ Adapt. Reg. Adaptive regression. The score of the response including primary process interpretations (oral, oral-aggresive, aggressive, sexual and anal interpretations) is multiplied by the GL-score, and then a mean of the sum is calculated.
The manual for scoring the primary processes has been constructed on the basis of the publications of Holt & Havel (1960) and Holt (1978, p. 225-330).

SCORING OF REGRESSIVE CONTENTS IN RORSCHAH'S TEST.

Oral contents:

3 p. Suckling, nursing, the breasts, hunger,
dryness, thirst, feeling ill, vomiting

2 p. a mouth, lips, the tongue, the chin,
kissing, the stomach, drunken people

1 p. small pigs, pigs
cigarettes, cigars, pipes,
eating, drinking, cooking
food, appetite
table utensils, cooking utensils

Oral-aggressive contents:

4 p. cannibalism
castrating or sadistic biting

3 p. parasites, e.g. flees, lice etc.
poison

3-2 p. biting, chewing

2 p. teeth, chin, mouth

a shark, an alligator, a crocodile,
a hawk, a vulture, a mosquito

verbal aggression: quarreling,
swearing, blaming etc.

1 p. sexual symbols, snakes, openings, tunnels, love, marriage, a romance, a date, wedding rings etc., virginity, the Valentine hearts, a stamen, a pistil, a caterpillar

Anal contents:

4 p. the organs for excretion, excretion

3 p. buttocks, the hinder part entrails, intestine, a sewe[illegible] toilet, a WC

1 p. the tail of an animal, back feet, an expression of disgust to warde the figure, bad smell, mud, dirt, a blot

3052 Rep. The repression scale:

1. Rej. + RT = denial 4 p., a prolonged
   initial time
   45 sec. or more 3 p.,
   30 sec. or more 2 p.,
   15 sec. or more 1 p.
   Zubin et al. (1965, p. 361).
2. R = 10 or under 2 p., 12 or under 1 p.
3. ET constricted (0:0) 2 p., narrow (1:1) 1 p.
4. Criticism of the object: 3 times mentioned 2 p., 1-2 times mentioned 1 p.
5. Movement responses 0 4 p., 1 3 p., 2 2 p., 3 1 p.
6. W % (Vide Klopfer et al. 1954, 49-69) 75 or over 2 p., 50 or over 1 p.
7. F % 70 or more 2 p., 55 or more 1 p.
8. A % 70 or more 2 p., 55 or more 1 p.
9. H % $\leq$ 15 1 p.

The limits for the percentage numbers have been based on the investigations by S. Nieminen (1980a). A score which has laid on two deviations's distance from the mean has yielded 2 p., and a score which has laid on one deviation's distance has yielded 1 p. The scale is based on the studies of Bahnson & Bahnson (1966), Nieminen (1980a) and Viitamäki (1970).

3053 Intell. The scale of intellectualization:

1. Descriptions given to more than two tables 2 p., descriptions to one or two tables 1 p. (Vide Zubin et al. 1965, p. 357)
2. Description of color more than once 2 p., once 1 p.
3. Confabulations or elaboration more than once 2 p., once or a continuous tendency towards them 1 p. (Vide Zubin et al. 1965, p. 356 Elaboration tendency).
4. Interpretations, vocational or scientific two or more 2 p., one 1 p.
5. Abstractions and symbolic interpretations two or more 2 p., one 1 p.
6. Symmetry dominating, taking into account the middle line, mirror images, reflection interpretation, point 1-3 each time this is mentioned 1 p., but the maximum is 3 p.
7. RI = 8 1 p.

The scale is based on the studies by Nieminen (1980) and Furustrand (1976).

3054 Reg. The scale of regression:

1. One M-interpretation at the highest to the III table 1 p.
2. R = 10 or below 1 p.
3. F-responses two or more 2 p.
4. An inkblot response [illegible] p.
   A blot response 1 p.
5. Interpreting responses (could be a human figure etc., vide Zubin et al. 1965, p. 360) three or more 2 p., 1-2 1 p.
6. Oral, anal, aggressive, sadistic and sexual contents lacking in good form level (GL 3 p. or below). 1 p. for each response.
7. Isolation contents. 1 p. for each response.
8. FM > M = 1 p.
9. P % 60 or more 1 p.
10. Perseverations. Two or more 2 p., one 1 p.
11. (CF + C) bigger than (F + FC):2 1 p.
12. Unspecified AT-contents. Two or more 2 p., one 1 p.

The scale is based on the investigations by Järvinen (1973) and Nieminen (1980).

3055 Proj. **The projection scale:**

1. W ≧ 10 1 p.
2. Dd ≧ 3 1 p.
3. M- interpretations 1 p.
4. Ms- interpretations 1 p.
5. Phantasy responses or a tendency towards them 1-2 p. (Vide the scoring of scale 25).
6. The idea of self-reference. Two or more interpretations 2 p., one 1 p.
7. A paranoid attitude towards the test or experimental situation 1 p.
8. Paranoid contents in the interpretation: the spreading of rumors, gazing eyes, frontal face, a sly fox etc. 1 p. of each interpretation.
9. A man from the back side.
10. S-responses two or more 2 p., one 1 p.
11. FC > FC' 1 p.
12. C responses 0 1 p.
13. Hd- or Ad- responses 1 p.
14. A % above 55 1 p.

The scale is based on the investigatigations by Järvinen (1973) and Viitamäki (1968).

3056 Narc. **The narcissism scale:**

	1 p.	2 p.
1. Anatomical response	2 resp.	3-4 resp.
2. Sexual responses	2 "	3-4 "
3. Clothing responses	2 "	3-4 "
4. Infantile contents (children, rabbits, for men flowers etc.)	1 "	2-3 "
5. Oral contents	1 "	2-3 "
6. Reflection responses (mirror, except table VIII)	1 "	2-3 "
7. Exclamation	1 "	2-3 "
8. Exhibition contents	1 "	2-3 "
9. Color description	1 "	2-3 "
10. (cF + c)	2 "	3-4 "
11. (mF + m)	2 "	3-4 "
12. Evaluation (Bewertung)	1 "	2-3 "

The scale is based on R. O. Viitamäki's lectures in psychodiagnostics' given at the University of Helsinki in 1967.

APPENDIX 14

ITEMS OF JOB SATISFACTION QUESTIONNAIRE

The following list comprises statements concerning your work. Circle the alternative which in your case is correct.

	completely of different opinion	somewhat of different opinion	somewhat of same opinion	completely of same opinion
237 There is a good atmosphere among the teachers in our school				
238 My work corresponds to my aims and plans				
239 I get enough information concerning the new teaching and school plans				
240 I get only relevant criticism of my work				
241 I feel that I get no results in my work				
242 My superiors rely on me				
243 My work is interesting				
244 My work raises my self-esteem				
245 My work is a routine task				
246 My colleagues are nice				
247 I manage well with my students				
248 I get enough praise from my boss on my work				

249 I will continue as a teacher

250 My vocation has corresponded to my expectations

251 My vocation corresponds to my abilities

252 The vocation of a teacher is rated high in general

253 In the teacher´s vocation there is place for continuous development

APPENDIX 15

MEANS AND DEVIATIONS OF THE JOB SATISFACTION ITEMS

Total number of cases is 93

v	237	238	239	240	241	242	243	244
x	3.40	3.24	2.96	2.66	1.64	3.38	3.60	2.76
s	0.68	0.59	0.61	0.79	0.69	0.61	0.66	0.75
n	75	76	76	76	76	76	76	76

v	245	246	247	248	249	250	251	252
x	1.93	3.54	3.49	2.80	3.60	3.29	3.09	2.50
s	0.85	0.55	0.53	0.92	0.73	0.61	0.58	0.70
n	76	76	75	76	76	76	74	76

v	253
x	3.50
s	0.72
n	76

APPENDIX 16

INTERCORRELATIONS OF JOB SATISFACTION ITEMS

	237	238	239	240	241	242	243	244	245	246	247	248	257	251	251	252	253
237	1000																
238	10	1000															
239	35	15	1000														
240	15	15	40	1000													
241	-17	-40	-25	-80	1000												
242	25	15	25	15	-25	1000											
243	15	40	20	85	-55	95	1000										
244	90	35	25	-70	-45	20	50	1000									
245	-55	-30	-10	25	15	20	-25	-20	1000								
246	80	30	20	30	-25	25	30	15	-20	1000							
247	10	40	15	75	-25	30	30	-05	-30	30	1000						
248	20	10	20	25	-90	35	25	15	00	80	10	1000					
249	25	45	15	20	-35	30	45	30	-85	20	30	20	1000				
250	15	65	20	20	-50	15	55	45	-30	40	35	20	30	1000			
251	-10	35	-35	10	-20	-10	40	30	-20	50	25	15	10	45	1000		
252	90	20	10	25	-25	45	15	75	-35	65	20	20	15	25	20	1000	
253	-45	30	15	10	-45	20	50	45	-10	10	80	35	20	50	35	40	1000

APPENDIX 17

JOB SATISFACTION UNROTATED FACTOR MATRIX

	I	II	III	IV	V	VI
237	0.34	-0.67	-0.17	0.03	0.22	-0.05
238	0.68	0.14	-0.23	-0.16	-0.18	-0.19
239	0.36	-0.35	0.04	0.18	0.04	0.10
240	0.22	-0.16	0.22	-0.37	0.07	-0.19
241	-0.66	-0.03	-0.06	-0.16	0.17	-0.22
242	0.32	-0.43	0.30	0.06	-0.21	0.02
243	0.71	0.17	-0.00	0.11	-0.06	-0.02
244	0.57	0.15	0.10	0.42	-0.06	-0.00
245	-0.29	-0.18	0.31	-0.14	-0.22	0.19
246	0.49	-0.44	-0.41	0.01	0.14	0.12
247	0.39	0.07	-0.25	-0.37	-0.20	0.21
248	0.36	-0.20	0.42	-0.08	0.16	-0.16
249	0.54	-0.14	0.06	-0.13	-0.33	-0.17
250	0.78	0.17	-0.14	-0.05	0.11	-0.04
251	0.45	0.42	-0.04	-0.08	0.19	0.00
252	0.36	0.06	0.24	-0.33	0.22	0.21
253	0.59	0.24	0.57	0.09	0.16	0.11
Eigenvalues	4.29	1.40	0.95	0.72	0.54	0.34
Percent of total variance	25.2	8.2	5.6	4.5	3.2	2.0
Cumulative percents	25.2	33.4	39.0	41.35	46.7	48.7

APPENDIX 18

VARIMAX SOLUTION - 3 FACTORS

	I	II	III	h^2
237	0.01	0.17	0.75	0.59
238	0.69	0.12	0.21	0.53
239	0.10	0.29	0.40	0.25
240	0.02	0.32	0.12	0.12
241	-0.52	-0.37	-0.18	0.44
242	-0.06	0.50	0.35	0.37
243	0.65	0.32	0.09	0.53
244	0.49	0.34	0.03	0.36
245	-0.43	0.16	-0.07	0.22
246	0.32	-0.01	0.70	0.60
247	0.43	-0.03	0.18	0.22
248	0.04	0.57	0.11	0.34
249	0.34	0.35	0.27	0.31
250	0.75	0.24	0.17	0.65
251	0.58	0.10	-0.19	0.38
252	0.23	0.37	-0.03	0.19
253	0.46	0.56	-0.16	0.54
Eigenvalues	3.18	1.82	1.65	6.64
Percent of total variance	18.7	10.7	9.7	39.1
Cumulative percents	18.7	29.4	39.1	

APPENDIX 19

SCALES OF JOB SATISFACTION

Job satisfaction scale I (nr. 3020): items nr. 238, 243, 244, 250, 251.

Job satisfaction scale II(nr. 3022): items nr. 242, 248, 252, 253.

Job satisfaction scale III(nr. 3021): items nr. 237, 239, 246.

APPENDIX 20

THEMES OF INTERVIEW

Themes_related_to private life:

1. Marital status furing the last 20 years: married, living together without marriage, dirorced, death of the sopuse, unmarried.

2. Children: the number of children.

3. State of health during the last 20 years and at the time of the investigation.

4. The state of health of the spouse and children furing the aforementionde period.

5. Illness or accident of other relatives or intimate friends which has affected the life of the teacher (subjective experience).

6. Change of job: how often and why.

7. Contentment with the present place of living. Description of the place (country, village, densely populated area; the occupational structure of the population).

8. The size of the present working place (the number of teachers and pupils).

9. If has changed occupation: why?

Themes_related_to the 20_years_of teaching:

10. Have you sometimes planned to change your occupation?

11. If there would be a chance to change occupation, would you do so and to what kind of occupation?

12. Has your vocation been to you a calling or how did you once become a teacher?

13. Is the vocation of a teacher esteemed to your ecperience according to the same extent and in the same way as 20 years ago?

The changes in_children's behavior_during the 20_years:

14. Is the behavior of the children different from what it was 20 years ago? If it is different, describe how.

15. Is there a difference in the learning ability of the children?

16. Is there a difference in the learning proneness of the children?

17. Is there a difference in the concentration of the children?

18. Is there a difference in the mutual relations of the children?

19. Is there a difference in the attitude towards the teacher by the children?

The teacher´s vocation to-day:

20. What is your experience of the peace at work in your school?

21. What are the positive sides of the teacher´s vocation?

22. What are the negative sides of the teacher´s vocation?

23. During the 20 years has a change taken place in the teaching contents, and if so in what direction?

24. What is your opinion of the teaching materials?

APPENDIX 21

SCALE OF MENTAL HEALTH (no. 3028)

THE NOTION OF THE MENTAL HEALTH OF THE TEACHERS UNDER OBSERVATION, OBTAINED DURING THE INTERVIEW, AND ITS SCORING

In the interview situation the discussion progresses neatly, the contact is open and natural. The teacher's outer appearence: the clothing, the expressions, gestures and movements are adequate, balanced and harmonious. 5 p.

In the interview situation the teacher is somewhat reserved, the behavior is somewhat restless, concentration is scattered or there is some disharmony in the outer appearance. 4 p.

In the interview situation the teacher's behavior, concentration or contact is more problematic than in the previous cases, or the content of the interview has revealed a significant problem in human relations. 3 p.

The interview situation has revealed more serious problems in human relations than those described above. The teacher has obtained psychotherapeutic or psychiatric treatment, or is evidently in need of it. His train of thought and treatment of problems holds how- ever to reality and he has still been capable of maintaining his work relations. The disturbance is here on the level of a neurosis. 2 p.

The problems of the teacher is more serious than those of a neurosis: psychopathy, severe misuse of alcohol, borderline problems or occasional psychotic phases. The teacher has obtained psychiatric treatment, has had leave of absence due to mental disturbance, or because of his behavior has had obvious difficulties in taking care of his job. 1 p.

APPENDIX 22

SCALE OF PHYSICAL HEALTH (no. 3090)

The physical health of the teacher:

Physically healthy, no remarkable illness or symptom 3 p.

Mild symptoms, e.g. allergy, temporary headache, temporary inflammations 2 p.

Chronical illness which restricts action 1 p.

APPENDIX 23

ACADEMIC ACHIEVEMENTS AND DEGREES

The studies of psychology:

Approbatur (the lowest course) in psychology or special education 3 p.

Cum laude (the medium course) in psychology or special education 5 p.

Laudatur (the highest course) in psychology or special education 7 p.

Approbatur (the lowest course) in education 2 p.

Cum laude (the medium course) in education 4 p.

Laudatur (the higest course) in education 6 p.

GROUP A VARIABLE 3087

Degrees received:

- M.A. or an equivalent 4 p.
- B.A. or an equivalent 3 p.
- special teacher, junior high teacher 2 p.
- classroom teacher 1 p.

GROUP A VARIABLE 3088

Subject of specialization:

Elementary education 1 p.
Mother tongue (and teaching of reading and writing) 2 p.
Manual subjects: handicarfts, art, music 3 p.
Mathematics and commercial subjects 4 p.
Physical education 7 p.
Religion 8 p.
No subject of specialization 9 p.

APPENDIX 24

SCALE OF LIFE CHANGES

1. Health

   - recent illness (one week or more in bed or in a hospital) or chronical illness 6-3 p.

2. Work

   - being without work 5 p.
   - threat of being without work 3 p.
   - dismissal from work 5 p.
   - change to a new job, to a new school 2-4 p.
   - a change of the responsibilities at work 3 p.
   - difficulties with the foreman 2 p.
   - success in life, complementary studies 2 p.

3. Home and family

   - care of the health of the members of the family 5 p.
   - marriage (during the last 5 years) 5 p.
   - living separate from the spouse 5 p.
   - separation from the family due to work 3 p.
   - big changes at home 3 p.
   - a child is leaving home 2 p.
   - difficulties with the relatives 2 p.
   - change of apartment 1 p.

4. Personal and social affairs

   - the death of the spouse or of a child 10 p.
   - divorce 8 p.
   - condemned to prison 6 p.
   - sexual difficulties 4 p.
   - severe controversies with the spouse 4 p.
   - the death of a close relative 4 p.
   - economical difficulties 4 p.
   - big decisions concerning future 4 p.
   - the death of a close friend 3 p.
   - a change in the religious or political attitudes 2 p.

The scale is based on the investigations by Rahe (1972) and Romo (1977). Only those events are scored chich the subjects themselves have experienced as remarkable after they have become teachers.

APPENDIX 25

STATISTICALLY SIGNIFICANT CORRELATIONS OF THE ETIOLOGICAL EXPLANATIONS OF HEALTH WITH OTHER VARIABLES

Total group; N=163			Group A; N=76		
Variable	r	>p*	Variable	r	>p*
Variable 3004: psychological etiological explanations					
3035 $\bar{x}$ C	-.26	.01	3041 GL(1980)	.20	
3037 ET	.26	.01	3044 $\bar{x}$ PD	-.21	.05
3041 GL	.19	.05	3052 Rep.(1980)	-.24	.05
3055 Proj.	.18	.05	3090 Phys.hlth	.21	.05
			3053 Intell.(1958)	-.24	.05
Variable 3005: psycho-biological etiological explanations					
3016 Age	.24	.01	3011 D	-.21	.05
3036 FC:(CF+C)	.16	.05	3017 Sex	.28	.01
			3020 Job sat. I	.23	.05
			3022 Job sat. II	.23	.35
			3044 $\bar{x}$ PD (1980)	.33	.01
			3046 P% (1980)	-.23	.05
Variable 3006: biological etiological explanations					
3017 Sex	-.19	.05	3013 SOC	-.21	.05
3031 $\bar{x}$ (W-P)	-.16	.05	3017 Sex	-.32	.01
3047 RI	.19	.05	3020 Job sat. I	-.27	.02
			3045 A% (1980)	.21	.05
			3047 RI (1980)	.30	.01
			3093 Obl.mat.ex.	-.27	.02
			3094 Comp.	-.25	.02
			3036 FC:(CF+C) (1958)	-.21	.05

* two-tailed test

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APPENDIX 26

INTERCORRELATIONS OF REGRESSANDS OF TOTAL GROUP

	3016	3017	3029	3030	3031	3032	3033	3034	3035	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049
3016	1000																					
3017	-175	1000																				
3029	-090	050	1000																			
3030	655	-120	-290	1000																		
3031	-380	200	-205	-120	1000																	
3032	-015	015	480	-070	-055	1000																
3033	050	090	-130	185	140	-045	1000															
3034	010	-130	210	-170	-345	110	-590	1000														
3035	-090	135	-155	000	375	020	-005	-320	100													
3037	105	000	090	-005	-210	-030	440	-105	-550	1000												
3038	-100	155	600	-105	085	315	255	-285	170	220	1000											
3039	-055	-035	-015	000	235	045	-190	-095	-045	-085	-070	1000										
3040	245	-025	010	130	-350	045	175	280	-590	465	-225	-230	1000									
3041	070	020	-200	140	-005	-075	475	-135	-395	505	-055	-135	535	1000								
3042	-010	070	-035	005	035	030	500	-210	-190	610	290	-285	280	390	1000							
3043	-220	130	-020	-150	240	080	250	-140	045	225	150	100	-040	130	160	1000						
3044	-260	010	105	-165	040	070	-015	125	035	075	090	115	-140	-095	030	240	1000					
3045	080	-115	-045	020	-270	-245	025	230	-240	-070	-320	-275	430	185	-220	-115	-080	1000				
3046	130	-000	-580	210	130	-385	210	-125	-080	115	-380	-020	205	380	180	130	-110	190	1000			
3047	135	-080	130	-045	-330	055	115	055	-220	255	080	-140	295	245	195	-025	-045	260	270	1000		
3048	-105	170	315	-030	200	240	280	-080	045	225	450	170	005	220	280	155	095	-170	-205	-080	1000	
3049	-245	-070	415	-180	025	095	-250	070	080	-285	120	085	-225	-385	-310	-080	075	-075	-375	-090	-110	1000
3050	-280	-070	420	-175	180	245	040	-120	025	-085	280	105	-130	-105	-140	095	005	-105	-320	-015	085	520
3051	-320	-075	-070	-050	315	035	305	-300	185	-050	045	040	-090	175	030	185	020	-095	020	-055	080	220
3052	-220	-055	-280	-095	340	-170	-220	080	055	-345	-325	175	-185	-230	-105	-080	110	090	135	-230	-155	025
3053	-365	225	430	-080	250	225	145	-185	155	-075	455	115	-225	-110	-025	120	005	-175	-230	025	255	345
3054	-420	015	455	-270	210	145	-190	-005	135	-315	240	000	-385	-430	-285	-055	-015	-075	-380	-135	040	640
3055	-100	150	585	-060	-050	540	070	070	-055	105	475	-180	015	-025	180	-015	-075	040	-365	085	350	175
3056	-215	105	475	-085	090	220	070	-140	225	-100	500	070	250	-285	-025	040	025	-170	-430	-040	280	490
3000	-340	-095	015	-000	-080	-010	-050	180	-095	-005	-190	-085	085	010	-080	-085	015	080	-035	000	005	-020
3001	320	-045	210	055	-035	080	-130	-035	105	035	190	045	-105	-120	-055	-085	-070	-105	-175	050	085	085
3002	310	120	-050	015	-075	-035	040	000	-080	-080	-130	-170	015	-025	-065	-145	090	130	005	-185	-120	-035
3003	240	010	005	205	-110	030	030	-080	085	050	085	-130	-010	080	-020	-010	-055	080	-015	080	030	-080
3004	-145	025	070	-035	-030	040	025	-095	-255	255	025	095	140	190	085	080	015	000	055	-040	080	-085
3005	245	090	-045	005	010	065	065	025	155	-085	035	-080	-040	-045	-005	-030	080	-085	-100	-110	-005	-000
3006	-130	-185	025	-100	-180	-140	-050	090	-075	040	025	-040	005	-070	050	-090	-050	110	030	185	-080	-020
3007	-025	205	000	035	-010	-080	005	040	020	-030	025	-100	-050	-035	-030	-040	-045	015	-055	-020	085	-045
3008	-250	-135	095	-035	135	-075	016	-025	-035	070	-100	035	-135	-020	010	045	155	-080	-025	085	-045	-025
3009	070	-110	-050	115	035	-025	045	005	040	-055	-020	075	-130	-050	015	-105	-120	-035	105	045	025	-180
3010	045	025	015	-040	-030	-055	-065	075	-040	020	-040	-005	100	-095	-035	-080	-180	005	-025	-010	-075	030
3011	105	-070	-080	055	-110	-150	020	-085	005	055	-020	005	080	020	-030	-040	-130	100	000	-070	-080	-100
3012	-220	-050	080	-220	055	-115	-005	-105	005	010	070	045	010	-025	-015	055	-085	005	-130	-155	-025	120
3013	100	125	-055	070	035	-030	-005	-085	005	070	-025	025	025	025	030	130	-130	-035	115	-130	-080	-080
3014	-130	040	065	-140	030	-020	-045	080	055	-080	020	015	-030	-090	-110	140	005	080	-080	-180	-080	115
3015	140	-060	-025	100	-030	065	005	040	-010	045	110	-085	-055	-020	080	-040	020	-105	085	200	-040	-015

3050	3051	3052	3053	3054	3055	3056	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015
1000																						
865	1000																					
-115	-050	1000																				
470	345	005	1000																			
555	310	165	885	1000																		
340	085	-245	425	280	1000																	
395	285	-075	395	520	380	1000																
005	-020	100	-080	040	020	-085	1000															
130	035	-100	170	180	200	120	120	1000														
-040	-060	005	-075	-025	-040	-100	385	-200	1000													
-065	030	-245	000	-090	105	-020	120	355	-085	1000												
045	030	-140	000	-120	185	-035	015	-015	040	115	1000											
-085	-025	-055	-070	-015	-090	005	-085	145	-040	045	-580	1000										
-020	-050	080	010	010	025	015	-040	-085	-045	-085	125	-630	1000									
-065	-120	045	075	040	015	-020	490	020	055	190	010	-170	075	1000								
-025	045	190	005	015	-085	020	115	-090	150	-025	185	-185	-085	010	1000							
-115	-180	190	-035	025	-085	035	190	-130	-085	-030	015	005	045	255	085	1000						
030	-115	-020	-030	030	-040	070	-080	-035	050	-100	020	010	-050	-055	175	075	1000					
-050	-080	-060	-030	-075	-055	010	-145	-010	050	110	130	-090	040	-155	200	-040	625	1000				
215	145	-070	100	120	050	110	-025	050	125	005	105	-070	-005	-190	140	-235	455	980	1000			
090	110	030	-030	-005	-085	005	070	-025	025	025	025	030	130	-130	-035	115	-150	305	180	1000		
060	045	000	-055	120	030	090	030	135	325	-040	040	-035	000	-205	090	-310	285	280	375	190	1000	
-090	-075	010	-125	-070	-085	-045	-055	-125	-185	-120	-100	020	085	080	085	190	-205	-480	-585	-180	-270	1000

BEST COPY AVAILABLE

APPENDIX 27

REGRESSANDS OF TOTAL GROUP: UNROTATED FACTOR MATRIX

	Factors							
	I	II	III	IV	V	VI	VII	VIII
3016	0.48	0.08	-0.15	0.21	-0.57	0.18	-0.16	0.15
3017	-0.12	0.11	0.17	-0.01	-0.07	-0.23	-0.02	-0.18
3029	-0.64	0.34	-0.48	0.16	-0.03	-0.12	0.02	0.03
3030	0.34	0.05	0.13	0.14	-0.40	0.28	-0.32	0.06
3031	-0.26	-0.15	0.60	-0.11	0.13	-0.09	0.02	-0.09
3032	-0.38	0.27	-0.19	0.24	-0.14	-0.13	0.09	-0.04
3033	0.11	0.58	0.46	-0.12	-0.04	0.15	-0.05	-0.07
3034	0.10	-0.20	-0.64	0.18	0.11	-0.18	0.15	-0.15
3035	-0.31	-0.33	0.46	0.07	-0.27	-0.04	-0.15	0.07
3037	0.26	0.72	-0.03	-0.12	0.11	-0.13	0.09	0.01
3038	-0.58	0.52	0.06	0.12	-0.18	-0.21	-0.11	0.08
3039	-0.18	-0.19	0.18	-0.04	0.08	-0.11	0.03	0.13
3040	0.48	0.44	-0.38	-0112	0.05	0.18	0.18	-0115
3041	0.42	0.55	0.16	-0.15	0.12	-0.14	0.10	-0.17
3042	0.18	0.62	0.24	-0.03	0.08	-0.19	0.05	0.05
3043	-0.10	0.22	0.30	-0.13	0.11	-0.13	0.18	-0.06
3044	-0.12	-0.01	0.07	0.08	0.17	-0.26	0.25	-0.10
3045	0.30	-0.03	-0.36	-0.11	0.10	0.31	0.02	-0.13
3046	0.59	-0.00	0.33	-0.11	0.19	0.21	-0.01	0.01
3047	0.19	0.33	-0.21	0.16	0.11	0.24	0.03	0.14
3048	-0.27	0.45	0.15	0.08	-0.03	-0.27	-0.06	-0.06
3049	-0.61	-0.22	-0.22	0.03	0.06	0.28	0.13	0.02
3050	-0.65	0.11	-0.02	-0.13	0.11	0.43	0.08	-0.10
3051	-0.36	0.12	0.39	-0.22	0.15	0.51	0.12	-0.18
3052	0.02	-0.48	0.18	0.02	0.24	-0.07	-0.04	-0.04
3053	-0.68	0.20	0.13	-0.01	0.06	0.15	-0.15	-0.02
3054	-0.75	-0.21	-0.08	0.02	0.11	0.21	-0.04	-0.06
3055	-0.47	0.46	-0.28	0.09	-0.06	0.01	-0.13	-0.08
3056	-0.69	0.14	0.01	0.03	-0.08	0.08	-0.11	0.14
3000	0.06	-0.08	-0.17	0.07	0.13	-0.04	-0.33	-0.57
3001	-0.23	0.10	-0.06	0.03	-0.28	0.06	-0.11	-0.09
3002	0.08	-0.13	-0.13	-0.21	0.02	-0.10	-0.07	-0.37
3003	0.05	0.15	-0.04	0.01	-0.29	0.11	-0.31	-0.18
3004	0.03	0.27	-0.11	-0.25	0.38	-0.10	-0.28	0.08
3005	0.01	-0.08	0.15	0.19	-0.63	-0.04	0.41	-0.22
3006	0.04	0.02	-0.18	0.01	0.49	0.09	-0.23	0.40
3007	0.02	-0.02	-0.02	0.22	0.12	-0.10	-0.52	-0.37
3008	-0.01	-0.10	0.08	-0.22	0.20	-0.17	-0.11	-0.04
3009	0.10	-0.08	0.09	0.23	0.06	-0.0[illegible]	-0.35	0.05
3010	-0.01	-0.09	-0.22	-0.53	-0.20	-0.12	-0.09	0.20
3011	0.07	-0.02	-0.15	-0.71	-0.26	-0.07	-0.19	0.24
3012	-0.21	-0.02	-0.11	-0.75	-0.12	-0.05	0.03	0.02
3013	0.04	0.00	0.07	-0.29	-0.19	0.01	-0.15	-0.16
3014	-0.15	-0.11	-0.13	-0.46	-0.08	-0.09	0.11	-0.1[illegible]
3015	0.14	0.03	0.10	0.60	0.1[illegible]	0.05	0.05	0.19
Eigenvalues	5.3	3.58	2.76	2.72	2.10	1.49	1.47	1.34
Percent of total variance	11.8	7.9	6.0	6.0	4.6	3.3	3.2	2.9
Cumulative percents	11.8	19.7	25.7	31.7	36.3	31.6	42.8	45.7

APPENDIX 28

VARIMAX SOLUTION - 6 FACTORS

	I	II	III	IV	V	VI	h^2
3016	-0.15	-0.01	0.34	-0.06	-0.26	-0.68	0.67
3017	0.14	0.19	-0.23	0.02	-0.07	-0.00	0.11
3029	0.87	-0.11	0.15	0.00	0.04	0.14	0.80
3030	-0.24	0.08	0.14	-0.10	0.02	-0.55	0.39
3031	-0.12	0.16	-0.59	-0.02	0.28	0.13	0.49
3032	0.57	0.02	0.01	-0.12	-0.03	-0.06	0.34
3033	-0.05	0.71	0.03	-0.02	0.27	-0.16	0.60
3034	0.12	-0.45	0.34	-0.04	-0.40	0.19	0.52
3035	-0.01	-0.13	-0.62	-0.02	0.18	-0.25	0.49
3037	0.11	0.67	0.37	0.03	-0.15	0.09	0.63
3038	0.73	0.33	-0.18	-0.03	0.10	-0.07	0.68
3039	-0.02	-0.08	-0.29	0.02	0.05	0.13	0.11
3040	-0.08	0.28	0.70	0.09	-0.14	-0.01	0.60
3041	-0.21	0.62	0.38	-0.01	0.05	-0.01	0.56
3042	0.07	0.70	0.09	-0.08	-0.10	0.04	0.52
3043	0.04	0.35	-0.19	0.04	0.10	0.13	0.19
3044	0.10	0.04	-0.20	-0.11	-0.11	0.22	0.12
3045	-0.21	-0.17	0.51	0.10	0.02	0.03	0.34
3046	-0.66	0.28	0.13	-0.08	0.04	-0.01	0.55
3047	0.04	0.14	0.47	-0.20	0.05	-0.01	0.28
3048	0.42	0.40	-0.16	-0.08	-0.03	0.04	0.37
3049	0.36	-0.47	-0.05	0.04	0.42	0.11	0.55
3050	0.39	-0.12	0.01	0.11	0.68	0.11	0.65
3051	-0.02	0.16	-0.10	0.08	0.77	0.04	0.63
3052	-0.32	-0.27	-0.31	-0.09	0.00	0.23	0.33
3053	0.49	0.05	-0.21	0.00	0.50	0.10	0.54
3054	0.43	-0.41	-0.22	0.03	0.49	0.18	0.67
3055	0.68	0.11	0.18	0.01	0.13	0.02	0.52
3056	0.57	-0.07	-0.20	0.04	0.37	0.01	0.51
3000	-0.01	-0.13	0.11	-0.07	-0.11	0.13	0.08
3001	0.28	-0.03	-0.02	0.07	0.09	-0.22	0.14
3002	-0.09	-0.10	0.03	0.22	-0.13	0.10	0.10
3003	0.08	0.08	0.12	0.07	0.00	-0.31	0.13
3004	0.04	0.25	0.19	0.14	-0.01	0.41	0.29
3005	0.08	-0.05	-0.22	-0.02	-0.13	-0.62	0.46
3006	-0.07	-0.06	0.25	-0.13	0.08	0.43	0.28
3007	0.03	-0.03	-0.02	-0.23	-0.11	0.09	0.07
3008	-0.11	0.04	-0.15	0.15	-0.04	0.27	0.14
3009	-0.09	-0.02	-0.08	-0.24	-0.10	-0.01	0.09
3010	0.01	-0.08	0.03	0.60	-0.12	-0.00	0.39
3011	-0.08	0.04	0.05	0.76	-0.07	-0.06	0.60
3012	0.07	0.02	-0.05	0.78	0.12	0.12	0.64
3013	-0.08	0.08	-0.05	0.31	0.02	-0.13	0.13
3014	0.05	-0.10	-0.06	0.50	0.01	0.10	0.27
3015	-0.05	-0.00	0.04	-0.64	-0.05	-0.03	0.42
Eigenvalues	4.20	3.37	3.02	2.68	2.51	2.18	17.96
Percent of total variance	9.3%	7.5%	6.7%	6.0%	5.6%	4.8%	40 %
Cumulative percents	9.3	16.8	23.5	29.5	35.1	39.9	

APPENDIX 29

Intercorrelations of A group regressands

	3000	3001	3002	3003	3004	3005	3006	3007	3008	3010	3011	3012	3013	3014	3015	3016	3017	3020	3021	3022	3028	3029	3030	3031
3000	1000																							
3001	170	1000																						
3002	455	075	1000																					
3003	080	340	165	1000																				
3004	-100	-080	120	080	1000																			
3005	080	135	-025	155	-500	1000																		
3006	-130	-015	-080	-195	135	-775	.000																	
3007	320	040	-015	160	-110	-030	-030	1000																
3008	120	-255	-165	-120	070	-035	020	345	1000															
3010	-085	080	020	-075	145	-130	080	-020	075	1000														
3011	-175	055	150	115	170	-225	140	-180	-120	700	1000													
3012	385	158	255	210	135	-005	-025	-230	-385	425	840	1000												
3013	035	120	250	230	-005	110	-205	150	-080	155	315	290	1000											
3014	045	280	405	115	170	-110	085	-310	-520	320	355	510	180	1000										
3015	085	-270	-215	-275	005	-015	085	110	335	-230	-515	-675	-210	[illegible]	1000									
3016	700	-385	170	-215	-025	-080	030	110	280	080	025	-125	125	-175	340	1000								
3017	-140	085	080	210	-020	285	-325	175	-135	055	045	-035	320	085	-140	-050	1000							
3020	175	205	-055	-055	-080	230	-275	350	135	-040	-135	-145	175	-165	040	080	400	1000						
3021	000	030	-325	-135	-085	150	-125	185	345	-040	-185	-230	-180	-460	075	075	-065	290	1000					
3022	-005	-015	-280	115	-120	235	-110	130	100	-175	-185	-075	020	-270	005	005	195	435	320	1000				
3028	-030	-165	-035	040	085	-030	090	030	105	-505	-485	-385	-245	-280	295	-085	000	190	090	120	1000			
3029	045	115	150	005	-085	-085	120	040	-395	088	145	225	-110	105	-250	-130	070	-145	-280	-175	-245	1000		
3030	-015	140	-015	005	125	-180	025	125	180	-040	055	-010	130	-020	045	250	-035	240	140	245	070	-145	1000	
3031	-380	-035	-230	180	040	060	-130	040	085	-110	-210	-080	030	-080	150	-150	-085	100	080	145	146	-405	-025	1000
3032	085	-130	180	095	080	000	-100	040	-005	-085	-050	-080	-370	-010	010	-080	-030	-155	-130	-270	035	410	-175	085
3033	105	080	140	-050	050	345	030	-140	385	-085	-030	-015	-300	-005	085	115	-170	-105	-115	040	085	-050	135	-080
3034	025	-115	025	-140	-100	025	080	055	010	080	020	-125	-105	-000	-070	000	-025	150	175	035	-010	075	-270	-190
3036	-110	095	-155	185	-130	150	-195	075	080	045	-120	080	080	-030	040	-080	150	080	-085	-020	-075	-015	080	405
3037	-015	050	095	-080	185	-030	080	-115	-070	025	040	-030	100	000	075	080	005	-025	085	-035	040	020	-140	-240
3038	-015	230	110	-075	-030	048	020	135	-180	-015	-005	075	005	005	-035	015	045	005	-170	-115	-105	345	085	-035
3039	-105	-140	-245	-120	-025	-075	-080	-040	110	000	-030	025	050	-085	-080	-145	070	-035	-010	030	-050	-080	-075	180
3040	105	-100	075	-110	130	-120	170	-040	-105	070	185	100	025	040	-085	115	-030	050	-085	135	140	-025	-050	-380
3041	065	-050	080	-080	205	000	375	-080	035	-180	-140	-210	-105	-040	180	145	020	145	140	180	385	-210	025	-080
3042	130	085	100	-015	140	015	030	050	100	-080	-030	-110	210	-130	140	170	-045	135	055	085	175	-120	-005	-030
3043	-185	100	-075	075	075	055	-020	-130	-255	-105	-075	055	105	085	-015	-135	010	010	020	075	-005	120	-085	215
3044	-180	-045	000	-095	-205	330	-170	-210	-140	-175	-085	-110	-010	-120	040	-015	-085	-020	180	085	-100	-075	-245	000
3045	050	005	-015	005	-050	-120	215	-080	-095	125	235	200	-110	080	-185	-085	-215	030	015	180	-150	-020	005	-380
3046	-220	-140	-130	-035	195	-230	175	-085	175	-035	-045	-150	185	-075	280	225	050	110	085	130	225	-440	225	-100
3047	000	030	-040	-080	-040	-165	[illegible]	085	050	065	-000	-190	-180	-180	215	205	050	040	-015	000	030	300	-180	-380
3048	040	-015	070	-045	-030	085	-040	030	095	-115	-145	-085	-030	-030	070	-075	185	165	-085	115	120	180	-085	380
3049	-050	080	-030	120	-060	080	-070	075	-325	-020	-005	100	-110	210	-105	-130	005	-180	-300	075	-235	315	120	085
3050	120	125	075	010	010	-075	180	030	-135	025	070	275	110	100	-170	-080	-030	-080	-130	-015	-305	325	030	005
3051	100	-005	185	135	120	-030	030	-085	-225	-145	-020	130	180	190	-050	-180	-040	-100	-240	080	-120	095	040	170
3052	025	-050	-210	-100	-240	-070	070	125	220	-015	-020	-085	110	020	056	075	-240	020	105	040	-105	-400	185	280
3053	-045	085	050	110	-195	000	015	125	-115	078	200	175	095	015	-215	-037	100	095	-075	095	-285	510	285	-070
3054	-005	140	-030	270	-175	085	-050	040	-180	010	135	235	080	170	-385	-300	025	-155	-255	070	-280	445	-045	-015
3055	180	180	260	210	120	-380	310	070	-170	050	110	170	050	210	-250	-025	215	070	-085	030	-185	415	145	115
3056	-130	070	035	120	025	-085	040	-005	-035	350	115	[illegible]	-080	160	-120	-045	-010	-125	-135	080	-285	455	205	-020
3080	-035	345	-040	210	205	-180	110	205	170	-215	[illegible]	-135	015	-130	040	-070	215	130	055	140	465	150	275	045

BEST COPY AVAILABLE

3032	3033	3034	3035	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3060
1000																								
-010	1000																							
080	-005	1000																						
075	-030	-340	1000																					
-075	485	-130	-425	1000																				
245	300	-335	495	200	1000																			
000	[illegible]	-130	-010	-200	-325	1000																		
-040	180	230	-710	445	-290	-185	1000																	
050	400	330	-395	540	-015	-280	545	1000																
090	440	-110	-180	880	235	-175	315	630	1000															
105	190	-130	095	420	285	-145	000	130	310	1000														
-015	025	075	150	120	070	005	-255	-130	005	290	1000													
-385	-115	275	-440	-085	-420	-040	475	020	-270	-275	-150	1000												
-230	095	-095	-055	135	-135	085	140	290	260	040	-020	075	1000											
035	100	025	-270	255	140	-005	275	185	215	-045	-110	170	310	1000										
185	125	040	220	105	245	-060	-085	180	285	115	-065	-130	-140	-055	1000									
110	300	-225	180	-180	185	130	-235	-315	-340	020	085	-075	-320	-140	-085	1000								
240	245	-330	155	-040	280	015	-090	-195	-110	245	080	-135	-275	-035	050	385	1000							
145	385	-400	200	030	220	-025	-110	045	050	275	130	-200	-080	-195	100	280	795	1000						
-120	-230	185	-080	-385	-515	245	010	-195	-180	-275	-080	235	085	-225	-045	-100	-110	-105	1000					
315	200	-140	175	-000	475	005	-085	-175	-075	210	-020	-105	-135	100	125	330	390	290	-180	1000				
255	-015	-115	215	-315	120	280	-280	-500	-385	080	085	-005	-430	-175	085	575	458	380	075	540	1000			
545	005	190	025	045	295	-180	105	115	130	150	-195	-090	-205	-090	375	170	225	115	-175	425	290	1000		
205	200	-245	245	-030	405	025	-245	-195	-070	180	-025	-180	-255	-045	225	405	285	270	-180	640	515	315	1000	
180	-030	-035	025	-025	100	-045	110	130	095	-095	-285	-070	040	000	315	-140	-080	-085	-065	080	-040	170	075	1000

APPENDIX 30

A GROUP REGRESSANDS: UNROTATED FACTOR MATRIX

	Factors							
	I	II	III	IV	V	VI	VII	VIII
3000	0.01	0.12	0.01	0.21	0.21	-0.03	-0.00	0.15
3001	-0.25	0.08	-0.02	0.30	0.00	0.07	-0.08	0.03
3002	-0.22	0.29	-0.23	0.22	0.03	-0.07	0.25	-0.02
3003	-0.26	-0.02	0.08	0.33	0.00	0.17	0.19	0.18
3004	0.03	0.27	-0.16	-0.16	-0.10	0.35	0.34	-0.02
3005	-0.01	-0.16	0.37	0.61	-0.11	-0.46	-0.18	-0.02
3006	0.06	0.19	-0.33	-0.63	0.13	0.23	-0.01	0.08
3007	0.08	-0.05	0.23	0.14	0.39	0.25	-0.15	-0.07
3009	0.44	-0.12	0.22	-0.12	0.15	0.32	-0.19	-0.19
3010	-0.20	-0.07	-0.50	0.12	-0.09	0.25	-0.17	-0.46
3011	-0.36	0.02	-0.62	0.15	-0.11	0.29	-0.12	-0.27
3012	-0.53	-0.00	-0.50	2.24	-0.20	0.17	0.04	0.00
3013	-0.16	0.08	-0.07	0.42	-0.20	0.27	-0.03	-0.05
3014	-0.43	0.06	-0.44	0.14	-0.22	0.03	0.30	0.07
3015	0.49	0.08	0.41	-0.38	-0.10	-0.04	-0.05	-0.12
3016	0.26	0.15	-0.02	0.03	0.04	0.12	-0.29	-0.23
3017	-0.10	0.01	0.16	0.46	0.14	0.11	0.10	-0.11
3020	0.21	0.01	0.25	0.50	0.21	0.22	-0.18	0.04
3021	0.39	-0.10	0.18	0.14	0.10	0.02	-0.28	-0.02
3022	0.15	-0.02	0.25	0.28	0.09	0.16	-0.34	0.35
3028	0.48	0.18	0.31	-0.09	0.10	0.02	0.35	0.22
3029	-0.59	0.22	-0.07	0.15	0.49	-0.26	-0.04	-0.13
3030	-0.01	0.05	0.11	0.01	0.06	0.52	-0.20	0.11
3031	0.10	-0.23	0.46	0.05	-0.24	0.28	0.29	0.08
3032	0.31	0.19	0.21	-0.13	0.33	-0.14	0.31	-0.07
3033	-0.07	0.59	0.17	-0.11	-0.33	0.04	-0.24	0.13
3034	0.26	-0.21	-0.30	0.17	0.46	-0.27	0.13	-0.04
3035	-0.36	-0.28	0.54	-0.00	-0.20	0.25	0.11	-0.35
3037	0.17	0.75	-0.10	0.09	-0.20	-0.19	-0.12	-0.07
3038	-0.46	0.43	0.35	-0.07	0.08	-0.03	-0.08	-0.37
3039	-0.02	-0.35	0.02	-0.13	-0.07	0.09	-0.05	0.11
3040	0.32	0.45	-0.51	0.14	0.18	-0.05	-0.11	0.34
3041	0.43	0.66	-0.00	0.13	-0.03	-0.01	0.07	0.18
3042	0.28	0.71	0.12	0.19	-0.14	0.06	-0.03	-0.11
3043	-0.20	0.35	0.23	0.05	-0.26	-0.13	-0.00	0.03
3044	-0.04	-0.09	0.21	0.04	-0.30	-0.41	-0.15	-0.07
3045	0.17	-0.15	-0.56	0.04	0.17	-0.00	-0.23	0.32
3046	0.44	0.16	-0.02	-0.06	-0.25	0.34	-0.05	-0.05
3047	0.18	0.33	-0.15	-0.20	0.25	-0.10	-0.27	-0.17
3048	-0.09	0.22	0.33	0.08	0.21	0.08	0.19	0.00
3049	-0.56	-0.17	0.11	-0.17	0.00	-0.12	-0.11	0.21
3050	-0.60	0.16	0.14	-0.19	-0.10	0.05	-0.22	0.27
3051	-0.48	0.25	0.24	-0.13	-0.36	0.09	-0.03	0.41
3052	0.22	-0.47	-0.10	-0.03	-0.02	0.24	-0.09	0.28
3053	-0.61	0.19	0.17	-0.04	0.29	0.14	-0.38	0.00
3054	-0.72	-0.25	0.09	-0.07	0.14	-0.04	-0.14	0.25
3055	-0.42	0.31	0.05	0.19	0.41	0.12	0.20	0.05
3056	-0.61	0.14	0.19	-0.19	0.16	0.13	-0.19	-0.01
3090	0.08	0.17	0.20	0.01	0.41	0.36	0.28	0.11
Eigenvalue	5.75	3.87	3.81	2.49	2.33	2.14	1.78	1.89
Percent of total variance	8.2	8.1	5.3	5.0	4.5	3.8	3.6	
Cumulative percents	8.2	16.3	21.6	26.6	31.1	34.9	38.5	

APPENDIX 31

VARIMAX SOLUTION - EIGHT FACTOR

	I	II	III	IV	V	VI	VII	VIII	h^2
3000	0.11	0.07	-0.09	-0.03	0.02	-0.20	0.24	0.01	0.13
3001	0.11	0.05	0.18	0.12	-0.08	-0.02	0.32	-0.05	0.17
3002	0.18	0.25	0.14	-0.07	-0.37	-0.08	0.20	0.09	0.30
3003	0.04	-0.08	0.02	0.10	-0.19	0.07	0.48	0.08	0.28
3004	-0.13	0.19	0.05	0.02	-0.21	0.09	-0.05	0.52	0.38
3005	-0.02	0.04	-0.12	-0.08	0.07	0.08	0.44	-0.78	0.79
3006	0.08	0.00	0.05	0.10	0.00	-0.21	-0.53	0.52	0.81
3007	0.18	-0.09	-0.07	-0.10	0.44	0.02	0.25	0.13	0.33
3009	-0.17	-0.04	-0.10	-0.14	0.59	0.13	-0.09	0.18	0.48
3010	-0.00	0.01	0.78	-0.15	0.01	0.04	-0.04	0.10	0.82
3011	0.03	0.01	0.80	-0.01	-0.17	-0.09	0.05	0.19	0.71
3012	0.04	-0.08	0.81	0.15	-0.43	-0.09	0.21	0.09	0.85
3013	-0.15	0.10	0.33	0.12	-0.04	0.09	0.40	0.03	0.33
3014	0.01	-0.01	0.38	0.08	-0.81	-0.05	0.13	0.12	0.54
3015	-0.15	0.17	-0.44	-0.08	0.39	0.21	-0.35	0.01	0.58
3016	-0.08	0.23	0.14	-0.08	0.38	-0.04	-0.08	0.02	0.24
3017	0.09	0.08	0.05	-0.13	0.05	0.13	0.50	-0.03	0.30
3020	-0.07	0.08	-0.07	-0.08	0.42	-0.05	0.53	-0.03	0.47
3021	-0.17	0.00	0.12	-0.11	0.48	-0.08	0.07	-0.15	0.30
3022	-0.12	-0.07	-0.17	0.25	0.38	-0.22	0.35	-0.09	0.44
3028	-0.20	0.18	-0.83	-0.13	0.05	0.02	0.03	0.23	0.95
3029	0.84	0.03	0.12	0.01	-0.18	-0.10	-0.07	-0.01	0.75
3030	-0.06	-0.07	0.09	0.28	0.33	0.02	0.18	0.32	0.34
3031	-0.25	-0.21	-0.28	0.14	-0.02	0.48	0.24	0.10	0.49
3032	0.53	0.08	-0.23	-0.07	-0.20	0.17	0.03	0.12	0.42
3033	-0.03	0.51	-0.03	0.55	0.04	0.00	-0.09	-0.00	0.58
3034	0.09	-0.15	-0.08	-0.80	-0.01	-0.38	-0.05	-0.08	0.53
3035	0.11	-0.22	0.08	0.16	0.08	0.78	0.15	-0.05	0.74
3037	-0.04	0.80	0.03	0.12	-0.04	-0.18	-0.08	-0.07	0.71
3038	0.56	0.37	0.09	0.22	0.01	0.40	0.02	-0.03	0.87
3039	-0.12	-0.38	-0.60	0.08	0.04	0.05	-0.09	-0.01	0.17
3040	-0.12	0.37	0.02	-0.07	-0.04	-0.74	0.04	0.19	0.74
3041	-0.20	0.68	-0.28	0.02	0.04	-0.28	0.09	0.17	0.67
3042	-0.11	0.78	-0.08	0.08	0.12	0.01	0.12	0.09	0.67
3043	0.07	0.33	-0.07	0.32	-0.15	0.16	0.06	-0.16	0.30
3044	-0.06	0.05	-0.08	0.09	-0.08	0.15	-0.11	-0.54	0.34
3045	-0.15	-0.22	0.19	-0.08	0.01	-0.85	-0.08	0.08	0.55
3046	-0.47	0.24	0.01	0.04	0.24	0.05	-0.10	0.25	0.41
3047	0.20	0.32	0.05	-0.10	0.26	-0.25	-0.29	0.06	0.37
3048	o.25	0.15	0.25	0.03	0.04	0.17	0.25	0.14	0.28
3049	0.35	-0.33	-0.03	0.39	-0.19	0.04	-0.04	-0.18	0.45
3050	0.34	-0.08	0.08	0.65	-0.13	0.01	-0.01	-0.02	0.57
3051	0.07	0.04	-0.09	0.78	-0.28	0.11	0.07	0.01	0.68
3052	-0.36	-0.48	-0.01	-0.01	0.15	-0.15	0.01	0.09	0.41
3053	0.63	-0.04	0.20	0.42	0.17	0.01	0.14	0.04	0.67
3054	0.48	-0.48	0.11	0.41	-0.17	0.01	0.12	-0.13	0.69
3055	0.53	0.11	-0.01	0.04	-0.15	-0.03	0.39	0.27	0.54
3056	0.55	-0.08	0.14	0.43	0.03	0.15	0.01	0.08	0.54
3090	0.18	0.03	-0.29	-0.07	0.14	0.02	0.28	0.50	0.45
Eigen-values	3.71	3.69	3.12	2.94	2.81	2.72	2.58	2.31	23.87
Percent of total variance	7.6	7.5	6.4	6.0	5.7	5.6	5.2	4.7	48.7
Cumulative percents	7.6	15.1	21.5	27.5	33.2	38.8	44.0	48.7	

APPENDIX 32

VARIABLES OF REGRESSION ANALYSIS: MEANS AND DEVIATIONS

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Total number  of cases is  76

v      3018     3019     3023     3024     3025     3026     3027     3029
x      1.88     2.21    18.14     2.81     2.72     3.73    13.99    19.01
s      0.33     1.16     4.01     1.41     1.38     1.75     8.47     8.69
n        76       76       76       74       76       75       76       72

v      3030     3031     3032     3033     3034     3035     3036     3037
x     48.74    20.03     6.49     9.72    35.32     4.69    11.01    10.54
s     18.90     4.43     6.61     4.66    16.19     2.80    10.72     1.43
n        72       72       72       72       72       72       72       72

v      3038     3039     3040     3041     3042     3043     3044     3045
x      6.15     1.68    17.67    40.25    27.83    23.62    24.40    38.01
s      2.86     0.84     2.05     2.70    11.19     4.76     6.40     9.80
n        72       72       72       72       72       72       72       72

v      3046     3047     3048     3049     3050     3051     3052     3053
x     38.11     5.63     6.82     1.00     6.69    15.58    10.17     3.10
s     12.39     1.87     1.03     1.31     4.54     8.83     7.97     1.79
n        72       72       72       72       72       72       72       72

v      3054     3055     3056     3086     3087     3088     3089     3091
x      5.43     5.13     2.61     2.67     1.59     5.20     2.17    78.50
s      2.59     2.67     1.94     2.90     0.70     2.81     1.22     5.00
n        72       72       72       76       76       75       75       76

v      3093     3094     3095     3096     6000     6001     6002     6003
x      7.41     1.92    84.96    83.50   500.00   500.00   500.00   500.00
s      1.62     0.67     4.39     2.96   100.00   100.00   100.00   100.00
n        76       76       76       75       76       76       76       76

v      6004     6005     6006     6007
x    500.00   500.00   500.00   500.00
s    100.00   100.00   100.00   100.00
n        76       76       76       76
```

APPENDIX 33

INTERCORRELATIONS OF VARIABLES USED IN REGRESSION ANALYSIS

	3016	3019	3023	3024	3025	3026	3027	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047
3016	1000																									
3019	15	1000																								
3023	-30	20	1000																							
3024	45	15	-15	1000																						
3025	-10	45	-75	80	1000																					
3026	-20	-45	-30	-10	80	1000																				
3027	-30	15	-10	-15	-60	40	1000																			
3029	15	30	65	15	25	-15	-20	1000																		
3030	-65	20	-70	-10	-10	10	15	-40	1000																	
3031	-10	55	-60	-15	-60	20	20	-45	30	1000																
3032	15	30	20	40	10	-20	-10	55	-35	-15	1000															
3033	-60	50	-25	-15	-15	-75	60	-25	30	35	-10	1000														
3034	15	50	15	-65	-50	-65	-15	30	-30	-45	20	-60	1000													
3035	-20	-60	15	15	40	20	65	-15	60	50	-60	10	-40	1000												
3036	60	-10	-10	-65	35	100	-75	40	-20	-35	30	-10	30	-15	1000											
3037	20	-60	-50	-35	-25	-35	-60	-10	65	-65	-10	45	-10	-55	15	1000										
3038	10	-05	25	-75	65	-30	-10	60	-30	60	45	30	-25	25	30	10	1000									
3039	-10	05	-20	20	15	65	-65	30	10	-60	-10	-15	-15	-15	-15	-20	-40	1000								
3040	15	65	-30	-25	-10	-25	-10	15	-10	-60	40	45	30	-70	40	60	-20	-10	1000							
3041	15	60	-10	-25	-25	-20	05	-30	30	15	-15	60	-20	-20	60	65	65	-35	40	1000						
3042	30	10	15	-45	-35	-10	-65	-25	20	05	-60	30	60	-30	75	60	50	-30	45	60	1000					
3043	60	-15	30	-20	-25	-15	-15	-20	10	25	30	20	-15	25	-75	30	20	(10	-70	20	25	1000				
3044	-20	-50	-40	-60	-60	-10	30	-15	15	-10	-60	15	-10	-10	30	10	-50	60	25	25	40	-65	1000			
3045	-20	-60	-10	10	50	15	15	05	-20	-30	-15	-60	10	-30	15	-70	-40	-75	20	-15	-30	-35	-70	1000		
3046	-10	-60	-20	-60	-65	10	75	-55	50	40	-40	25	-25	20	-10	15	-25	-10	-10	35	15	20	15	100	1000	
3047	60	20	-15	-25	20	-60	-20	20	-30	-15	20	95	30	-20	25	60	15	-65	15	30	-05	-10	-25	35	15	1000
3048	25	10	05	-10	-85	-50	20	20	100	05	30	35	-25	-60	25	30	40	45	30	35	30	15	20	-20	-15	40
3049	30	-70	65	30	20	-95	-15	40	-10	-30	15	-25	30	-65	-10	-15	30	50	-15	-30	-30	-15	-15	-10	-30	-60
3050	60	75	10	15	65	65	05	45	-60	-15	10	-25	-10	-10	60	-70	20	30	-65	-30	-20	-65	-75	25	-40	-10
3051	-50	30	45	-35	-20	35	65	-10	20	20	-15	30	-30	-25	-30	15	20	20	-10	-75	65	60	-20	-60	-10	-30
3052	-75	30	30	-95	-20	30	10	-45	70	25	-30	-70	10	-45	-25	25	-40	-60	-65	10	25	10	75	-20	10	-60
3053	-15	60	-50	60	20	-15	15	30	-60	30	15	20	-20	65	60	-70	30	-15	-10	-55	-10	-15	-20	10	-75	20
3054	70	-25	75	20	10	-90	-15	55	-10	-55	35	-25	20	10	-60	-35	35	20	-75	-50	-40	75	-25	-15	-40	-10
3055	10	10	-60	15	15	-15	60	65	-30	-20	55	-10	20	-15	15	-25	40	-60	65	-10	-75	-20	-25	40	-55	20
3056	-25	35	45	20	15	-30	-30	35	-65	50	15	-60	-60	10	10	-15	30	30	-15	-30	-20	65	-25	05	-30	10
3060	-15	60	-20	20	65	65	10	45	20	35	-10	-15	-75	15	-60	-15	-50	25	-10	-15	-20	-65	-05	-25	-10	-20
3067	70	-65	-20	25	10	15	20	75	-05	-50	-75	-95	-40	100	50	-25	-35	05	-10	-10	-25	-20	60	75	10	-10
3068	-45	25	-15	-75	65	95	25	-25	20	15	-65	10	45	10	15	45	-15	-25	15	10	20	60	-15	-65	15	50
3080	-30	-20	65	15	-15	60	10	40	-70	20	-30	-20	-20	30	15	-20	30	10	-10	-15	-30	60	-60	-60	25	-10
3081	-10	-75	-60	60	20	-50	-15	30	-25	-35	-65	-15	-10	20	20	-25	20	10	-20	-15	-30	75	-20	-10	-60	15
3083	-35	-30	-10	75	65	15	-55	20	-75	45	-15	60	-15	10	10	-75	10	-50	-15	-65	-20	-45	-75	65	75	15
3084	20	-30	-35	55	15	10	10	30	-55	20	-15	25	-35	70	20	55	20	-10	-10	-15	05	-95	-70	30	15	10
3085	70	-15	-15	15	20	-15	-15	40	-15	65	95	-35	-10	15	20	-15	30	75	-10	-10	-25	70	-25	-45	-10	10
3086	50	-05	-20	20	30	-25	-20	40	-60	-10	75	-35	-10	20	75	-25	25	30	-20	-20	-25	-10	-25	-50	-60	40
6000	-10	10	100	10	20	25	10	40	-65	-65	30	-15	55	100	-55	-30	25	35	-15	-25	-15	-10	-15	-10	-35	05
6001	10	-10	00	-15	-65	-15	-25	40	-70	40	10	10	-10	-25	75	20	20	-15	30	30	15	20	10	-60	10	15
6002	-30	95	-25	10	25	-20	30	-55	20	50	-20	15	-35	10	15	-30	75	20	-60	-95	-15	-30	65	60	-40	35
6003	15	-15	-10	-10	-65	20	40	-15	15	15	-15	75	-65	70	30	65	20	-10	-30	90	05	-40	-15	-15	-15	-05
6004	-45	30	-20	65	-25	-40	15	-10	60	-45	-15	15	-15	-10	65	95	-60	75	75	30	-30	30	95	20	-25	-15
6005	75	60	-75	25	-35	35	-15	90	-15	15	15	-90	-05	60	-70	-05	15	25	-20	90	15	20	-15	-15	-35	20
6006	-25	10	10	±15	-10	-90	-50	-15	15	65	30	05	75	10	-40	65	75	-60	05	-15	30	55	10	-15	75	70
6007	90	-10	15	20	20	20	70	-10	80	15	-20	-65	-64	25	-100	-25	-25	25	-100	-84	-20	-60	-40	-50	-20	-20

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3048	3049	3050	3051	3052	3053	3054	3055	3056	[illegible]	[illegible]	[illegible]	3060	3061	3063	3064	[illegible]	[illegible]	[illegible]	6001	6002	6003	6004	6005	6006	6007
1000																									
85	1000																								
75	85	1000																							
65	35	70	1000																						
-10	20	-60	15	1000																					
20	10	25	20	-30	1000																				
-60	60	55	15	-10	25	1000																			
20	20	30	25	-10	40	45	1000																		
15	35	40	20	-20	45	45	40	1000																	
35	15	35	-15	40	-10	95	-40	70	1000																
10	00	-45	-15	-50	-05	20	35	15	45	1000															
-15	-30	-15	-15	30	40	-20	-80	-10	-15	-30	1000														
-85	60	-10	-10	90	-85	85	-10	15	25	25	-15	1000													
90	20	-55	-15	-15	10	15	10	25	20	15	-85	20	1000												
10	-15	-10	-15	-15	50	10	15	-50	-40	20	-25	20	50	1000											
95	-10	-55	30	-15	10	-80	10	-10	-20	60	-15	55	30	55	1000										
20	30	15	-10	-10	25	40	30	15	60	25	-15	10	55	55	40	1000									
20	25	20	-40	-20	35	35	35	20	-80	05	-10	-10	45	40	35	70	1000								
20	35	30	10	-15	45	45	40	35	95	05	05	50	10	-80	-45	50	15	1000							
100	40	-10	-85	-20	-30	75	80	-10	85	-10	35	-10	-80	-15	-80	90	-85	-25	1000						
70	85	40	-20	-95	20	85	-90	27	100	10	20	10	-30	15	10	30	20	20	-15	1000					
65	-85	-95	30	-100	15	-90	10	-75	15	-65	-15	-10	200	40	40	25	25	10	00	10	1000				
-70	-45	25	25	-30	30	10	10	-35	-25	-15	85	-100	-30	-10	-05	-90	75	35	10	-80	00	1000			
-10	-15	20	45	-40	-15	200	100	15	-80	-10	-40	-40	-80	-80	-25	15	55	-15	-05	-20	-60	25	1000		
10	-20	-20	-15	15	20	-20	-20	-100	-30	-20	15	-80	-10	-20	-10	-25	-10	-05	85	-35	-80	-30	-10	1000	
-20	60	-40	-30	15	-85	10	-15	-15	90	20	-15	75	80	35	15	15	80	10	-30	-10	25	35	-30	20	1000

APPENDIX 34

RORSCHACH TEST CORRELATIONS BETWEEN GROUP A1 (1980) AND GROUP A2 (1958)

N= 76

Variable		r	p< (one-tailed test)
3029	R	.35	.005
3030	T/R	.28	.01
3031	$\bar{x}$ (W-P)	.28	.01
3032	Σ S	.21	.05
3033	$\bar{x}$ m	.18	--
3034	F%	.16	--
3035	$\bar{x}$ C	.25	.025
3036	FC:(CF+C)	.10	--
3037	ET	.29	.005
3038	EA	.10	--
3039	$\bar{x}$ K+k etc.	.08	--
3040	Form.-Qual.	.15	--
3041	GL	.36	.005
3042	H%	.25	.025
3043	$\bar{x}$ (A-S)	.10	--
3044	$\bar{x}$ PD	.18	--
3045	A%	.18	.05
3046	P%	.31	.005
3047	RI	.26	.01
3048	Σ O+	.13	--
3049	Σ AT	.26	.01
3050	Σ Agg.	.29	.005
3051	Adapt.Reg.	.28	.01
3052	Rep.	.30	.005
3053	Intell.	.51	.005
3054	Reg.	.25	.025
3055	Proj.	.24	.025
3056	Narc.	.30	.005

APPENDIX 35

CORRELATIONS OF REGRESSORS

Nr 3018 Marital status

N 76

Variable	r	p < one-tailed test
3003 Psych.und.	.24	.025
3017 Sex	-.25	.025
3019 Child.	.30	.005
3022 Job sat. II	-.20	.05
3025 Loc.sch.	-.19	.05
3026 N sch.	.20	.05
3027 Life ch.	-.29	.005
3028 Ment.hlth	.34	.005
3035 Σ C (1958)	-.19	.05
3037 ET (1958)	.20	.05
3042 HA (1958)	.27	.025
3086 Psych.stud.	-.23	.01
3089 Stage	-.27	.025
3092 Mat.ex.	-.20	.05

Nr 3024 Size of school

N 75

Variable	r	p < one-tailed test
3000 Rel.mor.et.	-.31	.005
3007 REL	-.27	.01
3017 Sex	-.21	.05
3020 Job sat. I	-.27	.01
3021 Job sat. III	-.23	.025
3025 Loc.sch.	.58	.005
3042 HA (1980)	-.22	.05
3049 Σ AT (1980)	.29	.005
3054 Reg. (1980)	.21	.05
3056 Narc.	.19	.05
3039 $\bar{x}$ K+k etc. (1958)	.22	.05
3040 Form.-Qual. (1958)	-.25	.025
3041 GL (1958)	-.28	.01
3042 HA (1958)	-.44	.005
3050 Σ Agg. (1958)	.20	.05
3054 Reg. (1958)	.24	.025
3087 Ex.	.23	.025
3096 Teac.abil.	.20	.05

Nr 3025 Location of school

N 75

Variable	r	p < one-tailed test
3007 REL	-.26	.01
3010 Hs	.20	.05
3011 D	.25	.025
3012 Sc	.20	.05
3017 Sex	.19	.05
3018 Mar.status	-.19	.05
3023 Yrs.teac.	-.23	.025
3041 GL (1980)	-.24	.025
3052 Rep. (1980)	.22	.05
3056 Narc. (1980)	.19	.05
3029 R (1958)	.25	.025
3037 ET (1958)	-.23	.025
3041 GL (1958)	-.26	.01
3042 HA (1958)	-.32	.005
3043 $\bar{x}$ (A-6) (1958)	-.21	.05
3047 RI (1958)	.19	.05

Nr 3026 How many schools has the teacher worked in?

N 76

Variable	r	p < one-tailed test
3016 Age	-.21	.05
3027 Life ch.	.43	.005
3035 $\bar{x}$ C (1980)	.22	.05
3041 GL (1980)	-.26	.01
3031 $\bar{x}$ (W-P) . (1958)	.20	.05
3035 $\bar{x}$ C (1958)	.22	.05
3032 Σ B (1958)	-.19	.05
3037 ET (1958)	-.25	.025
3040 Form.-Qual. (1958)	-.27	.01
3041 GL (1958)	-.21	.05
3096 Teac.abil.	-.19	.05

Nr 3086 Psychology studies

N 76

Variable	r	p < one-tailed test
3010 Hs	.25	.005
3011 D	.32	.005
3012 Sc	.34	.005
3014 HOS	.26	.01
3016 Age	-.19	.05
3017 Sex	.19	.05
3018 Mar.status	-.23	.025
3023 Yrs.teac.	-.25	.025
3030 T/R (1980)	.21	.05
3030 T/R (1958)	.27	.01
3039 x K+k (1958)	.20	.05
3052 Rep. (1958)	.20	.05
3087 Ex.	.65	.005
3089 Level	.32	.005
3091 Sch.cert.	.25	.025
3092 Mat.ex.	.21	.05

Nr 3089 The stage taught

N 75

Variable	r	p < one-tailed test
3018 Mar.status	-.27	.01
3019 Child.	-.22	.05
3033 $\bar{x}$ m (1980)	-.22	.05
3086 Psych.stud.	.32	.005
3087 Ex.	.31	.005
3091 Sch.cert.	.21	.05

Nr 3095 Mean of grades in the diploma from teachers' college

N 76

Variable	r	p < one-tailed test
3003 Psych.und.	.24	.025
3009 L	-.19	.05
3015 ES	-.34	.005
3016 Age	-.21	.05
3017 Sex	.31	.005
3021 Job sat.III	-.24	.025
3025 Loc.sch.	.19	.05
3029 R (1958)	.34	.005
3036 FC: (CF+C; 1958)	.21	.05
3038 EA (1958)	.26	.01
3042 HR (1958)	-.23	.025
3044 $\bar{x}$ PD (1958)	-.23	.025
3054 Reg. (1958)	.23	.025
3055 Proj. (1958)	.23	.025
3091 Sch.cert.	.63	.005
3092 Mat.ex.	.46	.005
3093 Obl.mat.ex.	.52	.005
3094 Comp.	.34	.005
3096 Teac.abil.	.72	.005

Nr 3096 Grade in teaching ability

N 76

Variable	r	p < one-tailed test
3003 Psych.und.	.19	.05
3015 ES	-.33	.005
3017 Sex	.39	.005
3024 Size sch.	.20	.05
3025 Loc.sch.	.26	.01
3026 N sch.	-.23	.025
3054 Reg. (1980)	.20	.05
3029 R (1958)	.35	.005
3037 ET (1958)	-.21	.05
3038 EA (1958)	.24	.025
3040 Form.-Qual. (1958)	-.20	.05
3041 GL (1958)	-.20	.05
3044 $\bar{x}$ PD (1958)	-.21	.05
3047 RI (1958)	.21	.05
3053 Intell. (1958)	.25	.025
3054 Reg. (1958)	.22	.05
3055 Proj. (1958)	.28	.01
3091 Sch.cert.	.49	.005
3092 Mat.ex.	.36	.005
3093 Obl.mat.ex.	.37	.005
3094 Comp.	.27	.01
3095 Teac. dipl.	.72	.005

Nieminen, Seija. 1984. Opettajien mielenterveyskäsitys, sen vastaavuus mielenterveyden dimensioihin ja niiden muutoksiin. Alkup. Teachers' perception of mental health, its relationship to their mental health and changes thereof. Research Report 27. Department of Teacher Education, University of Helsinki. 306 s. ISBN 951-45-3508-1. ISSN 0359-4203.

Tutkimuksen tavoitteena on selvittää peruskoulunopettajien mielenterveyskäsityksen, mielenterveyden ja niiden muutosten vastaavuutta. Mielenterveys on tutkimuksessa määritelty ihmisen fyysisen, psyykkisen, sosiaalisen ja henkisen olemassaolon dynaamiseksi ja jatkuvasti kehittyväksi integraatioprosessiksi.

Koehenkilöinä on kaksi opettajaryhmää: keski-ikäiset ja opettajakokelaat (N= 76+87=163). Näistä ensin mainitut ovat olleet opettajina 20 v, opettajakokelaat ovat v. 1980 olleet opintojensa päätösvaiheessa. Kumpikin ryhmä on tutkittu opintojensa alkuvaiheessa ja v. 1980.

Mielenterveys- ja terveyskäsityksiä on mitattu asenneväittämin ja etiologiaselityksin; mielenterveyttä MMPI:n lyhennysversio FAM:lla, Rorschachin testillä ja teemahaastattelulla; työviihtyvyyttä asenneväittämin. Lisätietona on ollut demografisia, elämänmuutos- ja opintosuoritusmuuttujia.

Tilastollisina menetelminä on käytetty keskiarvojen erojen testausta, korrelaatiokertoimia, item-, faktori-, diskriminaatio- ja regressioanalyyseja.

Keskeiset tulokset: Keski-ikäisten opettajien mielenterveyskäsitykset ovat psykologisesti ymmärtävämpiä kuin opettajakokelaiden ja heidän terveysselityksensä käsittävät useammin sekä psykologisia että biologisia tekijöitä. Tätä tulosta ei ole tulkittu kulttuurin muutoksesta johtuvaksi, vaan kypsymisen seuraukseksi. Sen sijaan se, että opettajakokelaat ilmaisevat enemmän demokraattisuutta, henkistä avarakatseisuutta, joustavuutta ja valmiutta luovuuteen, mutta myös eräitä oirekäyttäytymisen muotoja, on tulkittu kulttuurin muutokseen liittyväksi.

Omaksutut mielenterveysasenteet ja terveyden selitysmallit korreloivat opettajien ilmaisemaan ja mitattuun mielenterveyteen. Mielenterveyden dimensioiksi nousevat tässä tutkimuksessa produktiivisuus, sisäinen harmonia, koettu terveys, analyyttinen vs. kokonaisvaltainen havaitseminen, adaptiivinen regressio, sosiaalinen sopeutuminen, terveyden selittäminen, henkisyys vs. materiaalisuus. Mielenterveyden olennaisina tekijöinä pidetään tietoisuuden erilaisia ilmentymiä: koettua tietoisuutta omasta fyysisestä ja psyykkisestä tilasta, itsetietoisuutta, sosiaalista ja yhteiskunnallista tietoisuutta.

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